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ABSTRACT

This evaluation project presents a plan for a program to establish a clearinghouse for exchanging qualitative and quantitative data on instructional materials used in Australian schools. A range of elements necessary to plan a program suited to Australian requirements and conditions was investigated. Focus was on: the program's mission, capability, and setting; its management; its personnel; its coordination and balance; its research activities; its development activities; its potential for relationships with other institutions, agencies and organizations; its schedule; its facilities; its funding; and its product dissemination. The conclusion presents educational authorities with a set of recommendations for action. A bibliography, five appendices, and a glossary are included. (SI)

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A SYSTEM FOR THE EXCHANGE OF INFORMATION ON INSTRUCTIONAL MATERIALS

An Evaluation for Planned Change in Australian Education

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Submitted in partial fulfilment of the requirements for the Master of Education Studies degree at the University of Tasmania

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FOREWORD

A period of two and a half years has elapsed between the conception of the germinal idea for this project and the publication of its consequent report. That idea was born during the course of correspondence between the author and P. Kenneth Komoski, the Executive Director of the Educational Products Information Exchange (EPIE) Institute at New York, N.Y. during August 1986. The development of this project saw this idea transferred from that original source to its consideration for adoption at the national level of Australian education, and the collection of data on the problem area in Tasmanian education, and at an international level in the United States of America, in Canada, in the United Kingdom, in Iceland and in the Peoples Republic of China.

More importantly, a veritable revolution has occurred in Australian education during this period. This extensive change commenced with the publication of *The Challenge for Higher Education in Australia* by John S. Dawkins, the Minister for Employment, Education and Training in September 1987. This statement was soon followed by the declaration of proposals to overhaul higher education presented in the Green Paper, entitled *Higher Education: A Policy Discussion Paper*. The more contentious proposals, particularly on the funding of higher education by the student population, formed controversial issues for debate in educational circles across the nation during 1987 and 1988.

At the same time, measures were also taken to restructure national educational organisations to effect changes in primary and secondary education so that these levels would meet more closely the needs of higher education. The Commonwealth Schools Commission was amalgamated within the Department of Employment, Education and Training during November 1987, and a National Board of Employment, Education and Training was formed. These organisational changes were also made in conjunction with the development of a national curriculum and assessment framework for Australian schools, first announced on 23 May 1988 by the Minister for Employment, Education and Training in the paper, *Strengthening Australia's Schools: A Consideration of the Focus and Content of Schooling*. On 27 July 1988, the Minister for Employment, Education and Training, meeting together with the state and territorial ministers of education under the auspices of the Australian Education Council, agreed to work towards implementing a common curriculum for Australian schools in the core content areas of language arts, mathematics and sciences. Furthermore, the members of the Australian Education Council agreed that new structures and collaborative arrangements should be developed between national and state educational organisations to facilitate the implementation of the national curriculum and assessment framework.

In order to examine these issues, the Australian Education Council formed two working parties: the first to develop a timeline for implementing the national curriculum

framework; and the second to determine the capabilities and the collaborative arrangements between the Australian Council for Educational Research (ACER), the Curriculum Development Centre (CDC) and the Australian Schools Catalogue Information Service (ASCIS). A report from the latter working party is currently under consideration by the Australian Education Council, and a decision is expected to be announced during April 1989.

These developments should be taken into account when reading this report. As this report was written between September 1987 and December 1988, the relationships between Australian educational organisations described in the report are those existing during this period. As a result of the work of the Australian Education Council during 1988 and 1989, the structures of these Australian educational organisations and their collaborative relationships may alter drastically after April 1989.

In spite of these qualifications, the author presents this report to the Curriculum Development Centre and the Australian Schools Catalogue Information Service and to the representatives of foreign educational organisations as being consonant with the current changes occurring in the national planning of both the curriculum for Australian schools and the collaborative relationships between organisations in Australian education.

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12 December 1988

PREFACE

Only with the assistance of a number of people was it possible to establish valid aims and directions to complete this report. The supervisor, Phillip W. Hughes, Professor of Education, University of Tasmania, and the experienced teachers participating in the Centre for Continuing Education of Teacher's course, Curriculum Workshop, are to be thanked for their contributions.

The author wishes to acknowledge the assistance given by several colleagues of the Education Department of Tasmania in facilitating this project. Foremost, Glenn C. Pullen, Supervisor of Libraries, is to be thanked for providing the author with the reason to investigate the problem in the Australian context, with support through presenting submissions to the ASCIS Board of Directors, and with part of the information described within the report. Donald Palmer, Principal Education Officer, Educational Measurement Unit, is to be thanked for advice concerning the development of measurement instruments. Donald Levis, Director of the Southern Regional Office at Hobart is to be thanked for information on the work of the Australian Education Council presented in the Foreword to this report. Rosaleen Hellicar and Suzanne Chaplin, Curriculum Resources Section, provided information on the Resource Management Program. The following people provided data on practices and information on agencies of the Education Department of Tasmania: Robert Nurse, Supervisor, Curriculum Development and Evaluation Section; Vernon Nase, Librarian, Media Library, Curriculum Resources Section; William Turner, Superintendent, Student Services Section; Douglas Hickey, Principal Technical Education Officer, Curriculum Services Section, Division of Technical and Further Education; Rosemary Welch, Education Officer, John Read, Superintendent, Elizabeth Computer Centre, C. Bryce Ward, Chairman, Computer Management Committee; Helen French, Senior Teacher, Regional Resource Centre, Launceston Teachers Centre; Annette Yaxley, Consultant, Language Arts Resources Centre; Kathryn Ikin, Resource Teacher, Bowen Road Resource Centre; Rosalie Wood, Resource Teacher, Gifted and Talented Resource Centre; Peter Larkey, Consultant, Goodwood Arts Centre; Joy Edmunds, Resource Teacher, Flagstaff Mathematics Centre; Ian Pattie, Science Adviser, Maths Science Resource Centre; Hugh Fielding, Teacher-in-Charge, Molesworth Environment Centre; Donna Gee, Teacher-in-Charge, Sprent Environment Centre; Anthony McKenny, Teacher-in-Charge, Woodbridge Marine Studies Centre; Pamela Balon, Resource Teacher, Port Arthur Education Centre; and Roderick Grosvenor, Secretary and Malcolm S. Grant, Assistant Secretary, Schools Board of Tasmania.

Several people contributed information on practices applied in other Australian states. These included W.W. Robertson, Chief Education Officer, New South Wales Department of Education, Graham Noonan, Film and Video Acquisitions Officer,

Ministry of Education, Victoria, Helen L. Coghlan, Principal Education Officer, Queensland Department of Education, Roger Hansen, Manager, Educational Production Services, Education Department of South Australia, and Imogen Garner, Co-ordinator, Materials Evaluation and Purchasing, Ministry of Education, Western Australia.

Peter Jeffery, Australian Council for Educational Research, is to be thanked for providing information on the development of the *Curriculum Materials Review Guide*.

It was only possible to establish the research bases for this report through extensive correspondence. P. Kenneth Komoski, Executive Director, Educational Products Information Exchange (EPIE) Institute, New York is to be thanked for supporting the conduct of the project and for providing information on the activities of the EPIE Institute at an earlier occasion. David L. Elliott, Director of EPIE Institute's Western Projects Office, Kenwood, California also provided helpful information at an earlier occasion on the development of the instruments used by the EPIE Institute. Laurel Singleton, Senior Staff Associate, Social Science Education Consortium, Boulder, Colorado, is to be thanked for providing assistance in the conduct of the study.

Robin Syme, Assistant Director of Curriculum and Cynthia McArthur, Co-ordinator, Learning Resources, Ministry of Education, British Columbia are to be thanked, in particular, for offering information on the activities of the Canadian Exchange for Instructional Materials Analysis (CEIMA) in British Columbia and for editing the excerpt on the Canadian Exchange for Instructional Materials Analysis (CEIMA). Grace Parasuik, Director of Curriculum, Manitoba Education, offered information on the work of the CEIMA in Manitoba and also facilitated the project.

The research also depended upon assistance provided by people in Europe and Asia. Ingvar Sigurgeirsson, Director of the National Centre for Educational Materials, Reykjavik, Iceland, offered information on a project to implement the Sussex Scheme in Iceland and also interviewed one of the Scheme's developers, Michael Eraut, Professor of Education, University of Sussex, England. Michael Eraut is to be thanked for editing the script of the interview and the text of the excerpt titled, Education Area, University of Sussex, appearing in the report. Wu Yongxing, Director, Curriculum and Teaching Materials Research Institute, Beijing, Peoples Republic of China, offered information on a project to apply the Sussex Scheme in China.

Special credit is given to the author's brother, Christopher Watt, who sacrificed his own time to assume sole responsibility for the technical side of the reproduction of the report, to negotiate the work load with the typist, and to correct errors. Marjory Morris, is to be thanked for typing most of the report. Kerryn Langford, Lorraine Lovell, Pamela Curtain and Jennifer Walsh are to be thanked for typing correspondence. Warren Brewer, Superintendent, Curriculum Development and Evaluation Section, Education Department of Tasmania, is to be thanked for providing the facilities to duplicate copies of the report.

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we Change the System' from *Educational Leadership*, vol. 42, no. 7 on page 33; by Ingvar Sigurgeirsson to publish a quotation from the abstract of the thesis, Improving Curriculum Materials Development in Iceland through Curriculum Analysis; by the Australian Schools Catalogue Information Service to publish the content of a paper presented to Board Meeting no. 10 of the Australian Schools Catalogue Information Service and an excerpt from the minutes of the Board Meeting; and by Sage Publications to quote excerpts from the article by D. L. Madey and A. J. Stenner, 'Policy Implications Analysis: A Method for Improving Policy Research and Evaluation' from *Improving Educational Evaluation Methods: Impact on Policy*, edited by C. B. Aslanian, on pages 32 to 36. The excerpts published from *Educational Technology : The Closing-in or the Opening-out of Curriculum and Instruction*, by P. Kenneth Komoski, and *A Look at Current State-wide Text Adoption Procedures* by Charles R. Duke are in the public domain. The map of Tasmania is published with the permission of the Australian Bureau of Statistics.

Readers will note on page 74 that the author proposes an Addendum will be written to this report to analyse data remaining uncollected at the present time. Since completing the body of the report, the author has received notice from Mr. Komoski that it appears the questionnaire intended to collect this data had been mislaid. Because it is no longer feasible to collect this data, this document represents the final report.

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CHAPTER 1

THE INTRODUCTION

1.1 Background

The collection, the synthesis and the dissemination of qualitative information on instructional materials to teachers has represented an intractable problem in most contexts of the educational setting. The few, successful programs in education provide the evidence to substantiate this claim. The purpose of this report is to offer a planned solution to this problem for Australian education by basing that solution upon such estimable and successful programs operating in foreign contexts.

The difficulty for an educational organisation to effect a research and development program results, in part, from several major problems inherent in the development, the analysis, the selection and the implementation of instructional materials. Klein (1978) has identified five major problems: determining the characteristics of quality in instructional materials; determining the types of research methodologies to provide information on instructional materials; incorporating learner-based verification and revision; defining responsibility for learning resulting from instructional materials; and specifying the rights of interest groups to determine the materials to be used. Each of these issues is now discussed.

Although criteria applied by selectors and analysts are based upon a premise that they relate to the quality of instructional materials, there is little research evidence available to indicate that such criteria are sufficiently comprehensive for selectors and analysts to judge the intrinsic nature of quality in instructional materials. Research evidence is necessary to determine what makes for instructional materials of high quality. Criteria for judging a range of materials can then be derived from the results of this research.

A further difficulty is imposed by the limitations of research methodologies used to investigate instructional materials. Generally, experimental designs applying a pretest-teach-posttest model have been used to investigate what has been learnt from materials. Although these designs appear to be effective in providing answers about materials meant to develop cognitive behaviours, it is unlikely that such designs are appropriate for providing answers about materials meant to develop affective, psychomotor or a combination of behaviours. It is more likely that systematic observations and interview techniques, rather than experimental designs, will provide valid answers about how materials affect learners' values and physical performances. Furthermore, experimental designs cannot account for all the antecedent conditions and

contextual variables that are involved in learning from instructional materials. It is evident that research methodologies to investigate various aspects of instructional materials need to be extended, if valid answers are to be provided.

Learner-based verification and revision of instructional materials refer to procedures for gathering and analysing data obtained from field research of materials with appropriate groups of learners. Guidelines for learner-based verification and revision, however, have not overcome certain obdurate features. For instance, limits have not been clearly established as to which materials learner-based verification and revision should apply to; sampling procedures have not been clearly defined; issues relating to the replication of procedures and the generalisation of findings have not been solved; and the relationship between learner-based verification and revision and quality of instructional materials has not been established by research evidence.

An additional difficulty is whether the publishers of instructional materials or the teachers who use them are to accept responsibility for the learning resulting from the instructional materials. Publishers have usually been criticised for any aspects of bias that might be present in instructional materials. On the other hand, publishers have sought to shift to classroom teachers responsibility for learning resulting from instructional materials. Although shared between publishers and teachers, there is a reluctance for responsibility to be accepted by either party.

The final problem relates to the involvement of different interest groups in the selection of instructional materials. The influences of agencies funding instructional materials to maintain control of the materials' contents, the responsibilities of education departments, the activities of professional groups and the controversial assertion of rights by community groups to censor certain materials, have collectively tended to widen the numbers and composition of groups involved in the process of selection.

These issues have not been addressed systematically in the Australian educational context. The prospective program proposed by the author is an attempt to correct such failures in the context of Australian education through an institutional project, partly research and partly service.

1.2 The Rationale

1.2.1 The Rationale Statement

The purpose of the evaluation project is to present a plan for a program to establish a clearinghouse for exchanging qualitative and quantitative data on instructional materials used in Australian schools. The researcher investigates a range of elements necessary to plan a program suited to Australian requirements and conditions: its mission, capability and setting; its management; its personnel; its co-ordination and balance; its research activities; its development activities; its potential for relationships with other institutions, agencies and organisations; its schedule; its facilities; its funding; and its product dissemination.

The evaluation project, therefore, is a feasibility study through which the researcher intends to determine the optimal model for a prospective program to meet Australian requirements and conditions. By necessity, such a program plan is the consequence of an eclectic approach. The researcher proposes a program plan that embodies innovative methods, techniques and practices derived from a variety of foreign contexts. As well as determining which of these methods, techniques and practices can be adapted to suit

Australian requirements and conditions, the researcher also probes the potential contributions by educational organisations in foreign contexts.

The prospective program is based upon an assumption that the existing program to collect, to synthesise and to disseminate qualitative data on instructional materials in the context of Australian education has failed to recognise and to draw upon exemplary methods, techniques and practices used in foreign contexts. Furthermore, the program plan is based upon a belief that the existing program presents a deficiency of such a pervasive form that it cannot be remedied through adjustment of the existing program, but instead must be redesigned or replaced in toto. This belief is supported by observations that, firstly, there has been neither planned nor substantial investment in research and development activities at a national level in Australian education to analyse data on instructional materials, and secondly, those activities conducted at a state level in Australian education apply inadequate methods, techniques and practices to the problems of collecting, synthesising and disseminating data on instructional materials.

The prospective program, therefore, is likely to redress several significant problems which Australian education has failed to provide solutions in the past. Firstly, the prospective program has the potential to redress perceived incoordination and imbalances between the missions of various Australian educational organisations at both national and state levels through rationalising the provision of services by redesigning or replacing those existing, but ineffective, services. Secondly, the prospective program will remedy the inadequate training of personnel through an inservice program. Thirdly, the prospective program will increase research and development capabilities through support from existing research and development activities at foreign organisations. Fourthly, the prospective program will replace ad hoc approaches by a planned schedule. Fifthly, the prospective program will extend the facilities of the participating Australian organisations. Sixthly, the prospective program will increase cost effectiveness of the work through each of these actions, in spite of its labour intensive traits. Lastly, the prospective program will disseminate suitable products intended to match instructional materials and educational programs, thereby enhancing student achievement.

1.2.2 Background to Development of the Rationale

The rationale for the evaluation project arose from correspondence between the researcher and P. Kenneth Komoski, Executive Director, Educational Products Information Exchange (EPIE) Institute, during 1986. On 20 August 1986, the researcher presented the following question to Komoski.

> "Would EPIE Institute be prepared to extend its services or assistance to Australia, especially with the view to establishing a national service, including computerised databases, for selection and evaluation of educational materials in Australia?"

Komoski's response of 5 September 1986 to this proposal was favourable.

> "If an appropriate Australian educational institution wished to work with EPIE to extend its services to serve the needs of Australian schools, EPIE would be very interested in exploring the means through which this could be done."

The indication contained in this correspondence to establish a working relationship between the EPIE Institute and an Australian educational organisation remained dormant for some months. Then in December 1986, the researcher discussed the nature of his research on instructional materials, and his contact with the EPIE Institute with Glenn C. Pullen, the Tasmanian representative on the Board of Directors of the Australian Schools Catalogue Information Service (ASCIS).

Almost immediately, Pullen presented this information to several of his colleagues on the ASCIS Board of Directors. Acting upon this information, the ASCIS Executive Director, Georgina Cane, undertook a preliminary contact with the EPIE Institute.

In the meantime, the researcher had negotiated with Phillip W. Hughes, Professor of Education, University of Tasmania, to conduct an evaluation project on the topic as part of the requirement for a Master of Education degree. Following successful negotiations with Hughes, the researcher visited both the Australian Council for Educational Research (ACER) at Hawthorn, Victoria, and the ASCIS at Camberwell, Victoria, during August 1987. The purpose of these visits was to discuss with staff members the prospects of either of these organisations becoming involved in a co-operative venture with the EPIE Institute. The discussion with the Executive Director of the ASCIS was particularly positive.

This led the researcher to commence planning the evaluation project. Following discussions with colleagues at workshops conducted by Hughes, an evaluation design based upon the Context-Input-Process-Product (CIPP) Model, proposed by Stufflebeam et al. (1971b), was adopted. The collection of information for the evaluation project and the writing of the report commenced soon afterwards.

Meanwhile, Pullen presented a formal proposal to the ASCIS Board of Directors on 7 October 1987. The proposal supported the evaluation project being undertaken by the researcher. Furthermore, an initial milestone was then set at the presentation of a submission to the Curriculum Development Centre (CDC) by the researcher and Pullen, following the meeting of the ASCIS Board of Directors during April 1988.

Late in 1987, Pullen and the researcher agreed that a submission should be prepared for presentation to the forthcoming ASCIS Board meeting during April 1988. During the early months of 1988, the researcher presented Pullen with the chapters of the project report that constitute the context evaluation. From this information, Pullen developed a submission to be placed on the agenda for the ASCIS Board meeting, following determination of a consensus with the researcher on its contents.

The submission was received positively when the ASCIS Board met on 13-14 April, 1988. During the course of the meeting, Pullen reported that he was able to discuss the implications for action in the submission with the Director of the Curriculum Development Centre, who is also a representative on the ASCIS Board. The ASCIS Board agreed that the submission would be presented to the Curriculum Development Centre with one amendment. The submission document, which includes the amendment, is reproduced as Appendix A.

On the 26th August 1988, the researcher met for an hour with Brent Corish, the Director of the Curriculum Development Centre at Canberra, A.C.T. The purpose of the meeting was to discuss the intent of the project. The meeting commenced with discussions on the background to the project and the findings that could already be determined. The researcher was able to contrast the relative effectiveness of the approaches currently applied in Australian education to select and to evaluate instructional materials with those approaches applied by the Educational Products Information Exchange (EPIE) Institute in the United States and the Canadian Exchange for Instructional Materials (CEIMA) in Canada. At this point, Corish was able to inform the researcher of current developments in planning for the introduction of a national curriculum policy and guidelines for Australian schools. Both Corish and the researcher discussed the implications of the proposal to develop a clearinghouse to exchange information on instructional materials for the intended national curriculum. They agreed that these

developments would be compatible and particularly desirable outcomes. The researcher was able to pass on to Corish copies of correspondence from the EPIE Institute that related to interest expressed by its Executive Director for that organisation to become involved in Australian education . Corish indicated that an intention of the Curriculum Development Centre is to organise a conference or workshop on approaches to select and evaluate instructional materials, but he queried the necessity to invite personnel from foreign educational organisations because it would represent an additional expense. Furthermore, Corish felt that there would be no need to involve foreign educational organisations in planning and structuring the activities of a clearinghouse for Australian education unless it could be demonstrated that the practices, techniques and methods applied by those organisations were of such a nature as could not be applied by Australian educators. The researcher was able to reply that he believed such an assessment could not be made until the final report of the study was considered. Corish acceded, and he requested that a copy of the final report be made available to him before the ASCIS Board meeting planned for October 1988. In a concluding statement, Corish said that he believed planning of the clearinghouse will commence during 1989.

1.3 The Objectives

This evaluation project has three main objectives: to explicate the objectives of a prospective program to collect, to synthesise and to disseminate qualitative and quantitative data on instructional materials to Australian schools; to investigate the potential adaptation of innovative methods, techniques and practices to analyse qualitative and quantitative data on instructional materials; and to determine the resources that both Australian and foreign educational organisations may contribute to planning, structuring, implementing and recycling the procedures of the prospective program.

The context evaluation in Chapter 2 and Chapter 3 contains extensive treatment of the first objective. The explication of objectives for the prospective program is based upon a comparison of the findings that resulted from context evaluations of the existing systems for both research and service in American and Australian education.

The second objective is treated extensively in both the context evaluation and the input evaluation. In the former case, treatment of this objective encompasses examination of the methods, the techniques and the practices applied to analyse qualitative and quantitative data on instructional materials within the programs of three foreign educational institutions, two in the United States of America and one in Canada. In the latter case, the historical development of the applications of these methods, techniques and practices is traced within a range of foreign contexts, giving particular reference to adaptations undertaken in geographical contexts alien to the site of original development.

The input evaluation in Chapter 5 contains extensive treatment of the third objective. The planned change model is applied to assess the relevant capabilities of Australian educational agencies to provide resources for the prospective program. A questionnaire, which employs a technique termed Policy Implications Analysis, is administered to a panel of policy makers in foreign educational organisations to quantify their attitudes towards strategies that their agencies may contribute to the prospective program. By determining a congruence between these two assessments, a design for implementing the prospective program is specified on criteria of institutional capability, program elements, management, personnel, funding, schedule, facilities, and communication.

The products of the evaluation project comprise three documents: the report on the evaluation project; a review on the treatment of the topic in national reports on education emanating from the United States of America, and a supplementary report on existing practices used to analyse data on instructional materials in Tasmanian education. The report of the evaluation project is contained within this document, whilst the other two products are subsidiary documents.

The selection of component documents in the evaluation project was determined by the requirements of the post-graduate course to which the documents were to be submitted. The formats of each of these documents, however, were refined later to meet the requirements of specific audiences to which the documents are directed. There were two main audiences to which these documents were written: firstly, decision-makers and administrators at a national level in Australian, American and Canadian educational systems; and secondly, a range of personnel at the state level education system in Tasmania. Both the report of the evaluation project and the review of national reports on education were directed towards the former audience, whilst the supplementary report on existing practices in Tasmanian education was directed to the latter audience.

1.4 The Evaluation Design

1.4.1 Research Plan

A major problem confronting the researcher concerned the selection of an approach to educational evaluation that is pertinent to the programs of educational research and development agencies. It was soon recognised that most approaches to educational evaluation pertain to school programs, and there were few existent approaches available for the evaluation of research and development agencies. In view of this finding, the researcher decided to review texts that presented basic syntheses of approaches to educational evaluation in order to select an appropriate research model for the evaluation design. This led the researcher to consider two types of evaluation models: designs that are specifically appropriate to the evaluation of the programs of research and development institutions; and designs that are appropriate to the evaluation of school programs.

A set of criteria, expounded by Worthen and Sanders (1973: 210-215), was used to judge each of the approaches to educational evaluation reviewed. Important components of educational evaluation are represented by these twelve criteria: 1. definition; 2. purpose; 3. key emphasis; 4. role of evaluator; 5. relationship to objectives; 6. relationship to decision-making; 7. types of evaluation; 8. constructs proposed; 9. criteria for judging evaluation; 10. implications for design; 11. contributions; and 12. limitations.

As a result of this review, the Context-Input-Process-Product (CIPP) Model proposed by Stufflebeam et al. (1971b), was selected because it matched best the characteristics of the problem to be researched. The integrity of the match between the CIPP Model and the characteristics of the research problem is described for each criterion.

1. The problem defined in the project matches this characteristic in the CIPP Model; it pertains to defining, obtaining and using information for decision-making.
2. The purpose for the evaluation design of the project matches the purpose of the CIPP Model; it pertains to providing relevant information to decision-makers.
3. The key emphasis of the project matches this characteristic in the CIPP Model; the key emphasis is to provide an evaluation report for decision-making.

4. The role of the evaluator in the project matches the role defined in the CIPP Model; it pertains to providing specialist, evaluative information to decision-makers.
5. The terminal outcomes of both the context evaluation and the input evaluation in the project match the outcomes of these evaluation types in the CIPP Model; the outcome of the context evaluation is to set the objectives and other characteristics of the prospective program, whilst the outcome of the input evaluation is to determine ways educational organisations in foreign contexts may assist to provide the means to reach these objectives.
6. The relationship of the project to decision-making matches the definition of this relationship in the CIPP Model; it provides information for use in making decisions on the objectives of the prospective program and on the extent of involvement of foreign organisations.
7. Two types of evaluation inherent in the CIPP Model are applied in the project: a context evaluation in the contingency mode; and an input evaluation for neomobilistic change.
8. The constructs for each type of evaluation applied in the project comply with the constructs proposed in the CIPP Model; the context evaluation is used in the project to plan decisions; and the input evaluation is used to program specific decisions on the nature of involvement of foreign organisations.
9. Criteria used in the project to judge evaluation comply with criteria specified in the CIPP Model; internal validity, external validity, reliability, relevance, importance, scope, credibility, timeliness, pervasiveness and efficiency are criteria applied in the evaluation project.
10. The implications for design of the project match the implications for design in the CIPP Model; the evaluator does not apply experimental design, but uses a systems approach.
11. The contributions of the evaluation project match the contributions that are provided by the CIPP Model; the evaluation project contributes a service function to decision-makers of Australian and foreign educational organisations, and the evaluator takes account of feedback from decision-makers of these organisations.
12. The evaluation project would seem to be governed by limitations similar to those affecting the CIPP Model; value concerns are not emphasised, the decision-making process and methodology are not defined, all activities in the project are not clearly evaluative, although an attempt is made to overcome an inherent limitation of cost and complexity by restricting the evaluation to the context type and particular aspects of the input type. The statement of the rationale implies clear limitations on the use of the types of evaluation within CIPP Model. As the project is essentially a feasibility study, only the context and input types are appropriate to the research plan.

Stufflebeam et al. (1971b) define the purpose of context evaluation as serving planning decisions in order to determine objectives. Two modes of context evaluation are identifiable: contingency and congruence. Because the contingency mode involves identifying opportunities and forces beyond the boundaries of the immediate system to promote improvement in it, characteristic techniques of this type are employed to probe external forces and to predict projections into the future.

The use of one technique, however, does require particular comment. A decision was made to collect baseline data at a macro-level from within the immediate system, a technique more characteristic of conguence evaluation when the concern is with accounting for discrepancies between objectives and their terminal outcomes.

Stufflebeam et al. (1971b) have commented upon the doubtful value of collecting baseline data at a macro-level for contingency evaluations, for several reasons: firstly, the gain from baseline data at a macro-level is unclear; secondly, greater inputs of data are required at a macro-level; and thirdly, the nature of data required for prognostic purposes is different from data required to measure achievement levels. The limitations of collecting baseline data in the Tasmanian context are apparent. Although this collection served a need for such data at a state level, it failed to address the requirements of a national survey. To some extent, this problem was overcome by the collection of data at a national level but, because these data were non-random, the results may be unrepresentative.

The CIPP Model, however, proved to be inadequate to explicate the objectives and other characteristics of the prospective program. During the search, the researcher identified two examples of designs to evaluate programs of research and development agencies: a design proposed by Scriven et al. (1971); and a design proposed by Stufflebeam et al. (1971a). This latter example was selected to provide a statement of objectives and other characteristics of the prospective program because of its perceived compatibility to the CIPP Model.

Stufflebeam et al. (1971b) define the purpose of input evaluation as providing information for determining how to use resources to meet program goals. This is accomplished through identifying and assessing three characteristics: firstly, the relevant capabilities of a responsible agency; secondly, strategies for achieving program goals; and thirdly, designs for implementing a selected strategy. In this study, such a process assumes a particular form. In the first instance, the relevant capabilities of the two Australian educational agencies are identified and assessed, in the second instance, a technique is administered to probe strategies that foreign educational agencies may apply to achieve program goals, and in the third instance, the design for implementing the program is determined through establishing a congruence between existing capabilities of Australian educational agencies and strategies that foreign educational agencies can provide.

The CIPP Model ascribes a variety of methodologies for input evaluation, depending upon whether large or small change is involved and whether high or low information grasp is available to support the change. The conceptualisation of the decision-making process, described by Stufflebeam et al. (1971b), is used to determine that a neomobilistic decision setting pertains to this problem. The advanced attributes of methods, techniques and practices used in foreign contexts determine that innovative activity for inventing, testing and diffusing new solutions should be applied. Such a large change, however, is supported by little information within the Australian context. The planned change model, recommended by Stufflebeam et al. (1971b) for neomobilistic settings, is applied within this study in two ways: firstly, to assess the capabilities of the relevant Australian educational organisations; and secondly, to specify the design for the prospective program, in which innovative methods, techniques and practices derived from foreign contexts are superimposed upon existing practices in Australian education.

1.4.2 Data collection

Information required to answer questions on the topic was identified through searches of information databases on education and through personal communications. A

considerable proportion of the information required to conduct the evaluation project had been obtained beforehand.

The databases, *Resources in Education* and *Current Index to Journals in Education*, compiled by the Educational Resources Information Center, were the main sources for collecting information. Information was gathered by correspondence from state departments of education, the Australian Council for Educational Research (ACER) and the Australian Schools Catalogue Information Service (ASCIS) in Australia; from the Educational Products Information Exchange (EPIE) Institute and the Social Science Education Consortium (SSEC) in the United States, from the Canadian Exchange for Instructional Materials Analysis (CEIMA) in Canada, from Mr. Ingvar Sigurgeirsson in Iceland,and Dr. Michael Eraut in England..

1.4.3 Data Collection Schedule

Procedures for collecting data are described in the relevant parts of the report. Data were collected during the conduct of both the context evaluation and the input evaluation. For the context evaluation conducted in both Tasmania and other Australian states, most data were collected between October 1987 and December 1987. For the input evaluation, most data were collected between April 1988 and August 1988.

1.4.4 Techniques for data analysis

Qualitative data only were analysed during both the context evaluation and the input evaluation. Therefore, statistical methods were not applied to analyse data.

Qualitative data formed the bases for judging quality. Such data were used to make two types of judgements: firstly, on relative levels of performance in different contexts of the educational setting; and secondly, on predicting projections. In both cases, the use of qualitative data meant that criteria were non-numerical. In the former case, criteria were based upon categorical levels used to measure observations. The standards for judging quality were based upon the researcher's knowledge of the topic.

1.4.5 Reporting results

Qualitative data were reported through non-numerical summaries or descriptive analyses. Data from both the multisite case study in Tasmania and the policy implications analysis were reported through non-numerical summaries, whilst information on documents was reported by descriptive analysis.

1.4.6 Constraints upon the evaluation

The major constraints that faced the researcher concerned both available time and funding. The researcher was required to balance the development and the implementation of the research plan with the requirements to collect information frequently from foreign sources, and the need to present the report, in part or in whole, to various audiences. The balance was maintained through the researcher's efforts at both planning and collecting a large proportion of the information prior to commencing the writing of the report.

Although a proposal for a small sum to fund the project was presented to the ASCIS, this proposal was unsuccessful. The evaluation project was funded entirely by the researcher.

This funding was spent on searches of information databases and inter-library loans, for payments to a typist and for mailing correspondence.

CHAPTER 2.

THE AUSTRALIAN CONTEXT

In this chapter, the topic is examined in the Australian context. This is accomplished in two ways. Firstly, the programs of national educational agencies that provide information on instructional materials are outlined through a descriptive account. Secondly, both a survey of documentary evidence and a multi-site case study were conducted in the Tasmanian context to provide data on the extent to which techniques for providing information on instructional materials are being applied in the Australian context. In this study, the staffs of service agencies of the Education Department of Tasmania were surveyed to determine the characteristics of the procedures they use to evaluate educational products. The results of this study were extrapolated to the wider Australian context through an examination of a sample of documents from other state education departments.

2.1 Agencies and Programs

The first, and only, proposal to develop a national system of evaluations of curriculum materials was presented by The Australian Council for Educational Research (ACER). This endeavour, however, was aborted during the 1970's because this activity was to be encompassed within the mission of the newly founded Curriculum Development Centre (CDC). In spite of several projects fostered by the Curriculum Development Centre to provide evaluations of curriculum materials within specific curriculum areas, the Curriculum Development Centre has not attempted to develop a national system for the evaluation of a comprehensive range of educational products. The foundation of the Australian Schools Catalogue Information Service (ASCIS), however, has now made the development of a national system for evaluations of instructional materials a realistic possibility.

State education departments in Australia, moreover, have contributed to the development of evaluations of instructional materials. However, these efforts have been conducted independently for the most part. There has been no attempt, with the exception of the National Software Co-ordination Unit, to co-ordinate these activities.

It is within this climate that the contribution to the field by national educational agencies in Australia is now discussed in detail.

2.1.1 The Australian Council for Educational Research (ACER)

The Australian Council for Educational Research (ACER) was founded in 1930 as a national institute for educational research. In a large part, this educational research has taken place in test development. Funding is derived from the sale of publications, in particular test instruments, and from grants for educational research funded by governmental sources. The ACER is located at Hawthorn, Victoria, Australia.

2.1.1.1 The Curriculum Materials Review Guide

The Australian Council for Educational Research (1976) has developed an instrument to evaluate curriculum materials. Its developer, Jeffery (1987) reported that:

> "I made a detailed study of the EPIE Institute procedures and materials about ten years ago when I was setting up the curriculum materials reviewing system for the ACER. At that time it was envisaged that the ACER might play a wider role in the evaluation of curriculum materials on a national scale. However, the advent of the CDC changed all that and we have only maintained our review system quietly, mostly for the materials which we distribute.
>
> The original *Curriculum Materials Review Guide* owes much to the work of EPIE but also the work that I and colleagues did at the University of Papua New Guinea Teaching Materials and Resource Centre. I also worked closely with ACER staff members to create an instrument that would work for the sort of materials in which we are interested and with the sort of professional people we were dealing with. The original introduction to the *Curriculum Materials Review Guide* fully acknowledged the sources".

The third edition of the *Curriculum Materials Review Guide* consists of seven sections: 1.0 Review Identification; 2.0 Purpose and Basis; 3.0 Teacher's Guide; 4.0 Scope and Sequence; 5.0 Methodology; 6.0 Student Evaluation; and 7.0 Overview. This instrument employs Tyler's objectives model of curriculum development and includes both descriptive-analytic and evaluative functions but omits a decision-making function. Despite the inaction of the Curriculum Development Centre in applying techniques to evaluate curriculum materials, it seems unlikely that The Australian Council for Educational Research will endeavour again to apply the *Curriculum Materials Review Guide* to the evaluation of curriculum materials nationally.

2.1.2 Curriculum Development Centre (CDC)

The Curriculum Development Centre was established on 13 June 1973 as a result of a decision by the federal Australian government. Legislation in the form of the *Curriculum Development Centre Act*, 1975, formally instituting the Curriculum Development Centre, was passed by the Federal Australian Parliament on 27 May 1975.

As a result, the Curriculum Development Centre was allocated the functions of devising and developing school curricula and curriculum materials, undertaking, promoting and assisting in research into matters related to school curricula and curriculum materials, collecting, assessing and disseminating information relating to school curricula and curriculum materials, and arranging for the printing and publication of school curricula and curriculum materials.

These operational functions of the Curriculum Development Centre, however, have not been performed without constraint. During the early 1980's, the Curriculum Development Centre was deactivated because of funding restrictions. Following enactment of legislation, the Curriculum Development Centre was reconstituted during 1983. In July 1984, the new Curriculum Development Centre took the form of one of four divisions of the Commonwealth Schools Commission. This arrangement continued until 30 November 1987 when the staff of the Commonwealth Schools Commission was

transferred to the newly formed Department of Employment, Education and Training. The Curriculum Development Centre continues to operate in the Department of Employment, Education and Training reporting through a Curriculum Development Advisory Committee.

2.1.2.1 The Projects

The program of the Curriculum Development Centre has comprised three types: funded projects; conferences; and an information network. The projects, which are funded for specific periods, fall into three major categories: development projects; seed projects; and research projects. The development projects are directed towards either producing instructional materials or providing approaches to classroom transactions. Seed projects are feasibility studies for larger-scale projects. Research projects are conducted to provide priorities for future work in curriculum development in Australia.

The process for establishing projects has changed since the foundation of the new Curriculum Development Centre. Any person or agency has been able to present a submission, which has then undergone a process of testing and consultation. An important forum for testing and consultation is the regular meetings of the directors of curriculum from the education departments of all states and territories.

2.1.2.1.1 The National Software Co-ordination Unit (NSCU)

One project, the foundation and the development of the National Software Co-ordination Unit (NSCU), is now described in detail because of its close relationship to the prospective program proposed by the author in this document.

The National Software Co-ordination Unit (NSCU) was founded by the Curriculum Development Centre during January 1987, following a feasibility study (Western Australian Educational Computing Consortium, 1986). The aims of the National Software Co-ordination Unit are to provide information on computer courseware and computer-related instructional materials nationally, and to co-ordinate the exchange of information on the development of computer courseware. Four developments have occurred during 1987 to facilitate these aims: the establishment of a Software Co-ordinators Advisory Group; the establishment of a National Workshop on Software for Education; the formation of a network for sharing information on computer education projects; and the development of a database of computer courseware evaluations.

The Software Co-ordinators Advisory Group has been formed to improve communication between educational systems on matters of courseware development and evaluation. The National Workshop on Software for Education has been established to communicate information on computer courseware between producers, education systems and schools. The network is intended to facilitate the exchange of information between education systems on their courseware development projects. The database of computer courseware evaluations will facilitate the organisation on a national basis of evaluations of computer courseware already provided by state computer centres. The evaluations will be entered into the national database of the Australian Schools Catalogue Information Service (ASCIS). Each evaluation will be annotated on a set of descriptors providing both background information (a description of the package, a list of the computer hardware and software required to use the package, the relevant curriculum areas, suitable grade levels, references to published evaluations and case studies) and a

descriptive review of the usefulness of the courseware package in the classroom. It is intended that evaluations on the database will be available to teachers early in 1988.

2.1.3 The Australian Schools Catalogue Information Service (ASCIS)

The Australian Schools Catalogue Information Service (ASCIS) was formed because the staffs of many educational organisations expressed the need for a national cataloguing service for Australian schools. A Planning Group was established during 1981 to direct the formative development of ASCIS. On 27 August 1984, ASCIS was incorporated as a company limited by guarantee. The members of ASCIS are the Ministers responsible for education in the States and Territories, the Minister responsible for the Commonwealth Schools Commission, the Executive Secretary of the National Catholic Education Commission and the Chairman of the National Council of Independent Schools. Each member of the company, in turn, appoints one member to the Board of Directors. The Board is responsible for formulating policy, effecting accounting, recommending the budget and determining developmental activities.

Late in 1983, a staff was appointed to form an ASCIS secretariat, which at present consists of an executive director, a librarian, two cataloguers, an office manager, and two clerical assistants. The ASCIS secretariat is based in Melbourne, Victoria. A Technical Matters Sub-Committee has been appointed by the Board to advise on technical matters relating to the services provided by ASCIS.

Early in 1984, ASCIS contracted ACI Computer Services to develop the computer database. ACI Computer Services provided an adaptation of the Dortmund Bibliographic Information System and the Leuven Integrated Bibliographic System to develop on-line facilities to catalogue, to search, to provide information on serials, to compile information on circulations to users, to provide statistical information for managerial requirements, and to allow acquisition of amendments to orders. In order that records can be processed from a variety of sources, ASCIS commissioned a consultant, Manning, to propose a recognised set of standards for formatting catalogue records. As a result of the consultant's report (Australian Schools Catalogue Information Service, 1985a), AUSMARC III was selected as the recognised standard upon which the cataloguing sub-system of the database is now based. This standard provides that descriptors, as follows, are specified for cataloguing and searching: name; title; general material designation; statement of responsibility; edition; publication information; collation statement; series; local accession number; general system number (ASCIS order number); ISBN; call number; location information; subjects; and general notes. Consequently, the Australian Schools Catalogue Information Service (1985b) published a guide for teacher-librarians to catalogue instructional materials in accordance with ASCIS standards. The list, compiled by two project officers, was field-tested in a sample of schools and state cataloguing agencies across the nation during 1983. The list was revised on the basis of this field-test, and subsequently published. The list, which uses Australian English terminologies, is designed so that it can be used by school students.

In addition to the catalogue record, which provides bibliographic information, in the form of an annotated listing, there is provision for 'value-added' information to be added to each record. It is envisaged by the ASCIS staff that such 'value-added' information would consist of descriptive analytical and evaluative reviews, but could be used instead for evaluations based upon instructional design analysis. To date, the only 'value-added' information added to the database is based upon descriptive analytical reviews provided

in *Scan*, the journal of the Library Services, New South Wales Department of Education and the New South Wales Curriculum Information Network. At present, the Australian Schools Catalogue Information Service (1987) is developing a set of standards for 'value-added' information. The current edition requires that 'value-added' information be specified to contain a 'header' and a summary description, although provision is being made for specific subjects of the database, such as those being developed as a result of projects funded by the Curriculum Development Centre: the Australian Curriculum Information Network (ACIN); and the National Software Co-ordination Unit (NSCU). This set of standards requires that the format includes specific presentations for the descriptors of the abstract 'header', summary description, audience, grade level and availability information.

2.1.3.1 Services

2.1.3.1.1 Outreach

During an operational period of three years, ASCIS has extended services to approximately 4,000 of Australia's 10,000 schools. A further 2,000 schools receive catalogue records delivered from existing cataloguing systems of state education departments.

During this period, a survey of staffs of some 800 Australian school libraries was conducted by ASCIS. From the staffs of 323 schools that responded, the data from 300 returns, which represented both state and independent schools, were analysed. The aims of the survey were to determine how the ASCIS users are using ASCIS services, what sorts of results they are obtaining and what are the effects of these results. For both users and non-users, ASCIS wished to determine how they saw the future in relation to ASCIS services. The results of the survey have been published (Australian Schools Catalogue Information Service, n.d.).

2.1.3.1.2 Catalogue Services

At present, catalogue services are available to meet the needs of a diverse group of users. These are available in five forms: magnetic tape; catalogue cards; floppy disks; computer output microfiche; and dial-up access. Magnetic tape output allows users with their own automated services to load the entire ASCIS database onto their own systems. Catalogue cards allow users to order sets of catalogue cards for selected records.

2.2 Empirical Approaches to Evaluate the Australian Context

In order to verify this evidence, the researcher decided to apply empirical methods to gather qualitative data on the application of techniques used by Australian educators. Two designs were used to gather this information: a multi-site case study conducted in Tasmania; and documentary evidence collected from state education departments in Australia.

2.2.1 The Case Study in the Tasmanian Context

It was decided to investigate the Tasmanian context for three reasons: firstly, because it was believed that the results from an empirically-based survey would be replicable in a national setting; secondly, because it was found to be impracticable to gather

representative data on a national basis; and thirdly, because a survey of the Tasmanian context would provide valuable information for a review of such practices at a state level.

2.2.1.1 The Research Problem

In *The Review of Efficiency and Effectiveness of the Education Department* (Government of Tasmania, 1982: 31-33), the consultant, Hughes, identified four phases in the development of organisational structures in the Education Department of Tasmania. This development has been concomitant with an expansion of educational services to teachers. During the course of this development, the staffs at several service agencies of the Education Department of Tasmania have developed and applied various techniques to evaluate instructional materials independently.

As the staffs at different service agencies apply various techniques, that range in their reliability and validity, to report information to teachers on instructional materials, it was judged to be important to assess the characteristics of these techniques. It can be expected that assessments of the applications of a variety of techniques at different service agencies would indicate information on both the extent of reliability attained and the characteristics inherent in the sequence for reporting qualitative data on instructional materials in an Australian setting.

When there is extensive application of formal procedures by the staffs of service agencies, it can be expected that there would be less probability of random errors occurring in the measurement of consistency between observations. The extent to which these staff members use formal procedures, which provide more reliable scores, will also cause more valid qualitative information for matching curriculum materials to the instructional design to be reported. The extent of the validity of such information is also likely to be reflected in the stringency of adherence to the steps in an inherent, generic sequence of techniques.

The study sought to determine the following problems concerning the application of techniques to evaluate curriculum materials. Firstly, the prediction was made that there would be extensive application of informal procedures by the staffs of service agencies of the Education Department of Tasmania, to the extent that there would be lower reliability from measures than is necessary to reduce random errors to an acceptable level. Secondly, the prediction was made that there would be only an incomplete application at most service agencies of the set of techniques in the sequence, to the extent that there would be lower validity from measures than is necessary to reduce systematic errors to an acceptable level.

2.2.1.2 The Method

2.2.1.2.1 The Target Population

The target population for the multi-site case study comprised the staffs of service agencies of the Education Department of Tasmania that are involved in using techniques to evaluate educational products. Since a directory of such service agencies is unavailable, they were identified by several means: from the researcher's knowledge; from the telephone directories for Tasmanian area codes published by Telecom Australia; from a comprehensive list of ancillary educational establishments provided by the Executive Support Services of the Education Department of Tasmania; and from a list of twenty service agencies selected for survey by the executive group responsible for the project, *Learning Resources Review*.

Three distinct types of service agencies were identified within the population: service centres; resource centres; and environmental centres. These service agencies of the Education Department of Tasmania are administered through three arrangements: a central administration controls the service centres; regional offices, located at Hobart in southern Tasmania, Launceston in northern Tasmania and Burnie in north-western Tasmania, each provides a range of resource centres to service schools within its region; and collaborative arrangements between the Education Department of Tasmania and other state governmental agencies, the Department of Lands, Parks and Wildlife and the Department of Sport and Recreation, administer the environmental centres.

The criterion for including a service agency within the target population was its independence as an organisation. Service agencies in the northern and north-western regions of Tasmania administer a combination of services and resource centres. Each of these services and resource centres was not considered an independent agency so that, in these cases, only the service agency administering this complex was included in the population. On this basis, the population included in the survey comprised nineteen service agencies. Because of the small size of the population, it was unnecessary to survey a sample.

The staffs of the seventeen service agencies, who responded to the survey, belonged to four types of organisations: service centres; resources centres; environmental centres; and independent authorities. These are listed below under each category.

Service Centres

Site 1: The Curriculum Development and Evaluation Section located at the site of the Division of Educational Programs, North Hobart, Tasmania.

Site 2: The Media Library, Curriculum Resources Section located at the site of the Division of Educational Programs, North Hobart, Tasmania.

Site 3: The Student Services Section located at the site of the Division of Educational Programs, North Hobart, Tasmania.

Site 4: The Curriculum Services Section located at the site of the Division of Technical and Further Education, Hobart.

Site 5: The Elizabeth Computer Centre located at the site of the Elizabeth Matriculation College, Hobart, staffed by consultants in computer studies and catering to grade 1 through to grade 12.

Site 6: The Regional Resource Centre located at the site of the Launceston Teachers Centre, Launceston.

Resource Centres

Site 7: The Language Arts Resources Centre located at Hobart, staffed by consultants in the language arts, and catering to grade 1 through to grade 10.

Site 8: The Bowen Road Resource Centre located at the Bowen Road Primary School, Moonah, a suburb of Hobart, staffed by consultants in early childhood and primary education and catering to grade K through to grade 6.

Site 9: The Gifted and Talented Resource Centre located at the South Hobart Primary School, South Hobart, a suburb of Hobart, staffed by a consultant on student giftedness and talent and catering to grade 1 through to grade 6.

Site 10: The Goodwood Arts Centre located at Goodwood Primary School, Moonah, staffed by consultants in the visual arts and the performing arts and catering to grade 1 through to grade 6.

TASMANIA
PRINCIPAL PHYSICAL FEATURES
King Island
Flinders Island
Bass Strait
Smithton
Burnie
Devonport
Bell Bay
Eddystone Pt
St Helens
LAUNCESTON
Waratah
Arthur River
Forth River
Cradle Mtn
Ben Lomond
South Esk River
Leven River
Mersey River
Mt Ossa
Great Lake
Campbell Town
Queenstown
Macquarie Harbour
Frenchmans Cap
Swansea
Freycinet Peninsula
Derwent River
Gordon River
Lake Gordon
Lake Pedder
Huon River
HOBART
Orford
Maria Island
Eaglehawk Neck
Tasman Peninsula
Port Davey
Bruny Island
S.W. Cape
S.E. Cape

Site 11: The Flagstaff Mathematics Centre located at the Flagstaff Primary School, Warrane, a suburb of Hobart, staffed by consultants in mathematics and catering to grade 1 through to grade 6.
Site 12: The Maths Science Resource Centre located at the site of the Launceston Teachers Centre, Launceston, staffed by consultants on mathematics and science and catering to grade 1 through to grade 6.

Environmental Centres

Site 13: The Molesworth Environment Study Centre located at the Molesworth Primary School, Molesworth, a rural settlement 24 km north-west of Hobart, and operated for environmental studies in a lowland, dry sclerophyll forest environment.
Site 14: The Sprent Environment Centre located at the Sprent Primary School, Sprent, a rural settlement 32 km south-west of Devonport, and operated for rural studies in farm organisation and for environmental studies in a wet sclerophyll forest environment.
Site 15: The Woodbridge Marine Studies Centre located at Woodbridge, a coastal township depending upon orcharding and fishing, 37 km south of Hobart, and operated for environmental studies of a marine environment.
Site 16: The Port Arthur Education Centre located at Port Arthur, the site of a mid-nineteenth century penitentiary for convicts transported from Britain, on the Tasman Peninsula 104 km south-east of Hobart, and operated for historical investigation of this site.

Independent Authority

Site 17: The Schools Board of Tasmania located at Sandy Bay, a suburb of Hobart, an accrediting agency which plays an important role in the adoption of instructional materials at the secondary level (grade 10 through to grade 12).

2.2.1.2.2 The Measurement Instrument

Since the researcher was unable to identify a measurement instrument that could be administered to assess the characteristics of the various techniques used to evaluate instructional materials, he decided to develop his own instrument. It was recognised that Brickell and Aslanian (1979) had identified a set of stages - pilot-trial, pilot-test, field-trial and field-test - characteristic of the learner-based verification and revision process in product development. Furthermore, Eraut et al. (1975) had applied a set of criteria to judge the functions of descriptive analysis, evaluation and decision-making inherent in instruments used to analyse curriculum materials. These two elements were then adapted to form an instrument to measure the characteristics and the functions occurring in techniques applied to evaluate instructional materials.
Development of this instrument passed through three main stages. Initially, those characteristics described were ordered and presented on a written form. From this form, a checklist was then developed and presented to a colleague with expertise in measurement and statistics. On the basis of comments, this checklist was revised into a rating form. This instrument is reproduced as Appendix B.

2.2.1.2.3 Data Collection Methods

2.2.1.2.3.1 Documents

A survey of official documents, published by a variety of sources, was considered to be an important source of information for determining current practices on the uses of educational products in the instructional program. These documents included policy

statements issued by the Education Department of Tasmania and documents resulting from projects.

A second class of document was instruments used to screen or to evaluate instructional materials. In some cases, sample evaluations produced through the use of an instrument, were also examined. The uses of these instruments are reported in conjunction with results of interviews.

2.2.1.2.3.2 Interviews

Two techniques were employed to collect data: firstly, a form was devised which included the major elements of the measurement instrument; and secondly, the same form was adapted to serve as an interview schedule. This form is reproduced as Appendix C.

Initially, a copy of the form was circulated by mail to a representative of each service agency. The completed form was then returned by mail. Through use of the form, the researcher sought two types of information: firstly, the extent of the practices used by the staff of the service agency to evaluate instructional materials; and secondly, a request for subsequent information through an interview or documentary evidence.

The interviews were conducted at mutually arranged times between the researcher and contacts at each of the sites. The interviews, which in all cases required from a half to one-and-a-half hours to complete, were conducted at each site by the researcher who recorded information in writing. Because interviews were arranged to suit the convenience of respondents, it was impracticable to use recording devices.

2.2.1.2.4 Data Analysis

2.2.1.2.4.1 Documents

Qualitative analysis was applied to data obtained from examining documents. Once each document had been read, attention was given to the emphases or omissions of particular key issues. On this basis, the researcher was able to form intuitive judgements on the conceptual understandings shown by writers of documents.

2.2.1.2.4.2 Interviews

Qualitative analysis was also applied to data obtained from interviews. At a time shortly after the conduct of each interview, the researcher prepared a record of the interview based upon written notes taken during the course of the interview. Each interview record took the form of the interview schedule. As a check on accuracy, a copy of the interview record was sent to each respondent, who consented to participate in this procedure. In each case, the interview record was then revised on the basis of the respondent's comments.

It was necessary at this stage both to reduce the quantity of information to be reported and to administer the instrument the researcher had developed to assess each technique. Administration of the instrument allowed the researcher to reduce the quantity of information so that, in its final presentation, it was reported in tabular form. Following administration of the rating form, the results obtained were transcribed onto a reporting form suitable for reporting the results.

2.2.1.3 The Results

2.2.1.3.1 Documents

In Tasmanian education, techniques for selecting and evaluating curriculum materials have been introduced during the last decade. This has been accomplished for print

materials, audio-visual materials and educational equipment through a resource management policy. Introduced in 1975, the Resource Management Program comprises three sequential steps: identification by a school's staff of problems in the management of resources in the school; implementation of techniques for resource management; and information to maintain resource management in the school.

The Curriculum Resources Section of the Education Department of Tasmania provides a service to schools for reviewing resource management. The service provided by its staff applies techniques developed from the Resource Management Program. Following an inquiry from a school, consultants identify variables that affect resource management in that school, consult teachers and implement techniques described in the *Resource Management Guide for Australian Schools*.

2.2.1.3.1.1 The Resource Management Guide for Australian Schools

To support the implementation of the resource management policy, the Education Department of Tasmania (1983) has developed a guide comprising the following components: a user's guide; an introductory paper, Introduction to Resource Management; ten photographic study cards; a chart, Investigating Resource Management; ten Implementation Papers; and a 16mm film, Mrs. Harding Teaches Resourcefully.

The Implementation Papers are titled, Determine priorities for the acquisition of learning materials and equipment, Co-ordinate the acquisition of learning materials and equipment, Include school-produced learning materials when planning acquisitions, Co-ordinate decentralised facilities and collections, Intershelve audiovisual resources, Organise teacher-produced learning materials, List resources centrally, Match learning materials to the teaching program, Basic audiovisual equipment requirements for a school and its organisation and maintenance, and Teach information skills. Although these components are designed to be used collectively to conduct field work in resource management, the user's guide can be used independently for this purpose.

The components of the material are designed to develop and to implement a resource management program that follows a particular sequence over a specified duration. Step 1 is designed to run for two hours duration at a single session with a school's staff. The objective of Step 1, Recognition, is "to encourage staff to voice their concerns about resources in the school and to recognise the existence of problems" (Education Department of Tasmania, 1983, 11). Within a group session, a school's staff members read the introductory paper, Introduction to Resource Management, and then view the film, Mrs. Harding Teaches Resourcefully. In small groups, the participants then consider each of the study cards to identify the underlying issue of each and to determine its relevance to their own situation. The small groups then reunite to discuss and to compare the various issues identified. The terminal outcome is to elect a small committee to implement Step 2.

The objectives of Step 2, Investigation, are "to clarify the strengths and weaknesses in the acquisition, organisation and use of resources in the school" and "to determine the areas of resource management which the school wishes to improve" (Education Department of Tasmania, 1983, 27). Members of the committee, which should include either the school's principal or vice-principal, meet to conduct several activities on resource acquisition, resource organisation and resource use. These activities are to research and to document information on existing resource management in the school; to discuss and to interpret this information; and to decide which aspects of resource management need

improvement. A chart, Investigating Resource Management, is provided to complete this task.

The objective of Step 3, Implementation, is "to provide guidelines for implementing improvements in selected aspects of Resource Management" (Education Department of Tasmania, 1983, 33). Step 3 is achieved through the principal appointing an implementation committee, which has the task of selecting, in an order of priority, possible improvements for resource management. Sequential steps to be taken by the committee are to consider suggested procedures for implementation by referring to the appropriate Implementation Paper, and to decide on a suitable implementation strategy for the selected project.

2.2.1.3.1.2 Library Collection Development in Schools and Colleges

The Education Department of Tasmania (1985) has also published a policy statement, Library Collection Development in Schools and Colleges. The developer of the policy statement proposed that the staff of each Tasmanian state school should develop a policy which includes statements on selection criteria and selection procedures. It is also suggested each school should establish a Curriculum Resources Development Committee, which should meet three times a year, to evaluate curricular needs for materials, to evaluate existing curriculum materials, to select and to acquire new instructional materials, and to maintain collections.

2.2.1.3.1.3 The Learning Resources Review

During 1985 and 1986, a review of the uses of instructional materials in Tasmanian schools was conducted by the Education Department of Tasmania. Because the provision of instructional materials represents an expensive investment, the main purpose of this review was to determine accountability. An additional purpose of the review was to evaluate the impact of the work of the Resource Management Team, established in 1978 to assist school staffs implement effective systems for managing their collections of educational products. The review had four main aims: to review the existing procedures used by school staffs to select instructional materials; to review the existing systems used in schools to organise their collections of instructional materials; to review the mechanisms whereby curriculum materials provided by the Education Department of Tasmania are made available to schools; and to prepare recommendations on how both the delivery of instructional materials to schools and their management in schools can be improved.

At the time of writing this report, the review is still in progress although a final report, Education Department of Tasmania (n.d.) has been prepared. The review commenced with the appointment of a committee of thirteen members drawn from all sections of the Education Department of Tasmania, which first met during August 1985. From twelve officers of the Curriculum Resources Section and four advisory staff, an executive group of six members was formed to facilitate an evaluation project.

The executive group chose to employ a multi-site case study design to collect data. The case studies involved seventeen schools and twenty-five resource centres. Fourteen people, working in teams of two, collected data through the use of interviews and questionnaires during a seven-week period in April and May, 1986. Felton and Johnson (1986) have reported upon the application of a set of techniques in this project to increase the reliability of data collection, data analysis and the reporting of data through reduction and display.

The preliminary report was prepared during September and October 1986 on the basis of the reporting of the data at a workshop. In this report, certain criteria - appropriateness, leadership, coherence, centralisation, equity and support - were identified for evaluating the effectiveness of resource management. It was then determined that the criterion, appropriateness, comprised several characteristics: funding; selection; acquisition; storage; cataloguing; circulation; communication; production; sharing; planning; evaluation; and staffing.

On the basis of the interpretation of the results, the committee presented twelve recommendations to the Education Department of Tasmania and to colleges and to schools. Each of those recommendations that relates to the uses of educational products is listed under the appropriate section.

Power and Leadership

Recommendation 2 states:

> "That a professional development program for school and college principals and senior staff be planned and implemented, incorporating at least the following components:
>
> a. matching curriculum needs with the selection, acquisition, organisation and use of learning resources;
>
> b. developing and implementing a written learning resources policy statement;
>
> c. the essential elements of efficient resource management".

Recommendation 5 states:

> "That the Education Department enter into discussions with the Centre for Education of the University and with the Tasmanian State Institute of Technology with the view to increasing and improving components on learning resources and their management in initial teacher education".

Centralisation

Recommendation 7 states:

> "That schools and colleges act with all possible speed to create a central listing of all curriculum resources".
>
> (Education Department of Tasmania, n.d. *Learning Resources Review,* Hobart; Education Department of Tasmania, 28)

2.2.1.3.2 Interviews

Two problems were tested in this multi-site case study: firstly, that there would be an extensive application of informal procedures by the staffs of service agencies which, in consequence, would reduce reliability of measures; and secondly, that there would be incomplete application of the set of techniques in the sequence which, in consequence, would reduce the validity of measures.

A summary checklist of techniques performed on site-developed instructional materials at each service agency is shown in Table 1. It is evident from an examination of this table that techniques are applied to site-developed instructional materials at nine service agencies (52.9%). In these cases, it is apparent that the coverage of techniques at each step in the sequence is partial. Whereas procedures for both learner-based verification and revision, and decision-making for implementation were performed widely, few procedures were used for screening, for descriptive analysis and evaluation, and for decision-making for selection of site-developed instructional materials by the staffs of these service agencies.

The descriptive characteristics of each technique applied at the nine service agencies are shown in Table 2. The descriptions indicate that at least one technique, and sometimes two or more techniques, for providing information on learner-based verification and revision is performed at eight service agencies (88.9%). The usefulness of these

TABLE 1

SUMMARY CHECKLIST OF TECHNIQUES PERFORMED ON SITE-DEVELOPED INSTRUCTIONAL MATERIALS AT SERVICE AGENCIES.

Criterion	Site1	Site2	Site3	Site4	Site5	Site6	Site7	Site8	Site9	Site10	Site11	Site12	Site13	Site14	Site15	Site16	Site17
Learner-based verification and revision	YES	na	na	na	YES	na	na	na	NO	na	YES	YES	YES	YES	YES	YES	na
Screening for adoption	NO	na	na	na	NO	na	na	na	NO	na	NO	NO	NO	NO	NO	NO	na
Descriptive analysis and evaluation	NO	na	na	na	YES	na	na	na	NO	na	NO	NO	NO	NO	NO	NO	na
Decision-making for selection	NO	na	na	na	NO	na	na	na	NO	na	YES	YES	NO	YES	NO	NO	na
Decision-making for imple-mentation	YES	na	na	na	NO	na	na	na	YES	na	YES	YES	YES	YES	YES	YES	na

Note 1. na = not applicable

TABLE 2

TECHNIQUES APPLIED TO SITE-DEVELOPED INSTRUCTIONAL MATERIALS AT SERVICE AGENCIES.

Criterion	Site1	Site2	Site3	Site4	Site5	Site6	Site7	Site8	Site9	Site10	Site11	Site12	Site13	Site14	Site15	Site16	Site17
Learner-based verification and revision	PR[3] PE[3] FR[3] FE[4]				FR[2]						PR[2]	PE[3] FR[3]	FR[3]	PR[3]	PR[3]	PR[2] FR[2]	
Screening for adoption																	
Descriptive analysis and evaluation					DE[1]												
Decision-making for selection											IP	IP		IP			
Decision-making for imple-mentation	IP DM								IP		IP	DM	IP	IP DM	IP	IP DM	

Note 1. Key to techniques

IP = informal procedure
PR = pilot-trial
PE = pilot-test
FE = field-test
FR = field-trial
AF = appraisal form
DA = descriptive analytical review
DE = descriptive analytical and evaluative review
ID = instructional design analysis
IC = instructional design analysis to establish internal congruence
EC = instructional design analysis to establish external congruence
AN = annotation
WB = written brief
RS = rating scale
DM = demonstration

Note 2. The extent to which the technique meets a minimum standard of validity on a Likert-type rating scale.

1 = yes, definitely valid
2 = yes, probably valid
3 = of uncertain validity
4 = no, probably invalid
5 = no, definitely invalid

TABLE 3

SUMMARY CHECKLIST OF TECHNIQUES PERFORMED ON COMMERCIALLY PRODUCED INSTRUCTIONAL MATERIALS AT SERVICE AGENCIES.

Criterion	Site1	Site2	Site3	Site4	Site5	Site6	Site7	Site8	Site9	Site10	Site11	Site12	Site13	Site14	Site15	Site16	Site17
Learner-based verification and revision	NO	NO	NO	NO	NO	YES	NO	NO	NO	na	NO	NO	YES	NO	NO	NO	NO
Screening for adoption	YES	YES	YES	YES	NO	YES	YES	NO	YES	na	YES	NO	YES	NO	YES	YES	YES
Descriptive analysis and evaluation	NO	YES	NO	NO	YES	YES	YES	YES	YES	na	NO	YES	YES	NO	YES	NO	YES
Decision-making for selection	YES	YES	YES	NO	YES	YES	YES	YES	YES	na	YES	YES	YES	YES	YES	YES	YES
Decision-making for imple-mentation	YES	YES	YES	YES	YES	YES	YES	YES	NO	na	YES	YES	YES	YES	YES	YES	NO

Note 1. na = not applicable

TABLE 4

TECHNIQUES APPLIED TO COMMERCIALLY PRODUCED INSTRUCTIONAL MATERIALS AT SERVICE AGENCIES.

Criterion	Site1	Site2	Site3	Site4	Site5	Site6	Site7	Site8	Site9	Site10	Site11	Site12	Site13	Site14	Site15	Site16	Site17
Learner-based verification and revision						FR[3]							FR[3]				
Screening for adoption	IP	AF	IP	IP		IP	IP		IP		IP		IP		IP	IP	IP
Descriptive analysis and evaluation		AN[2]			DE[1]	DA[2]	DA[1]	DA[3]	DA[1]			DE[1]	DA[1]		DE[1]		AN[5]
Decision-making for selection	IP	IP	IP		RS	IP	IP RS	IP	IP RS		IP	IP	IP RS	IP	IP	IP	IP
Decision-making for imple-mentation	IP DM	WB	IP	IP		IP DM	WB DM	IP DM			IP	DM	IP	IP	IP	IP	

Note 1. Key to techniques

IP = informal procedure
PR = pilot-trial
PE = pilot-test
FE = field-test
FR = field-trial
AF = appraisal form
DA = descriptive analytical review
DE = descriptive analytical and evaluative review
ID = instructional design analysis
IC = instructional design analysis to establish internal congruence
EC = instructional design analysis to establish external congruence
AN = annotation
WB = written brief
RS = rating scale

Note 2. The extent to which the technique meets a minimum standard of validity on a Likert-type rating scale.

1 = yes, definitely valid
2 = yes, probably valid
3 = of uncertain validity
4 = no, probably invalid
5 = no, definitely invalid

TABLE 5

SUMMARY CHECKLIST OF TECHNIQUES PERFORMED ON COMMERCIALLY PRODUCED EDUCATIONAL EQUIPMENT

Criterion	Site1	Site2	Site3	Site4	Site5	Site6	Site7	Site8	Site9	Site10	Site11	Site12	Site13	Site14	Site15	Site16	Site17
Learner-based verification and revision	na	na	na	na	NO	na	na	na	na	YES	na	na	na	na	na	na	na
Screening for adoption	na	na	na	na	YES	na	na	na	na	YES	na	na	na	na	na	na	na
Descriptive analysis and evaluation	na	na	na	na	NO	na	na	na	na	NO	na	na	na	na	na	na	na
Decision-making for selection	na	na	na	na	NO	na	na	na	na	YES	na	na	na	na	na	na	na
Decision-making for imple-mentation	na	na	na	na	NO	na	na	na	na	YES	na	na	na	na	na	na	na

Note 1. na = not applicable

TABLE 6

TECHNIQUES APPLIED TO COMMERCIALLY PRODUCED EDUCATIONAL EQUIPMENT AT SERVICE AGENCIES

Criterion	Site1	Site2	Site3	Site4	Site5	Site6	Site7	Site8	Site9	Site10	Site11	Site12	Site13	Site14	Site15	Site16	Site17
Learner-based verification and revision										PR[3]							
Screening for adoption				NAV						IP							
Descriptive analysis and evaluation																	
Decision-making for selection										IP							
Decision-making for implementation										IP							

Note 1. Key to techniques

IP = informal procedure
PR = pilot-trial
PE = pilot-test
FE = field-test
FR = field-trial
AF = appraisal form
DA = descriptive analytical review
NAV = performed but not available for publication
DE = descriptive analytical and evaluative review
ID = instructional design analysis
IC = instructional design analysis to establish internal congruence
EC = instructional design analysis to establish external congruence
AN = annotation
WB = written brief
RS = rating scale

Note 2. The extent to which the technique meets a minimum standard of validity on a Likert-type rating scale.

1 = yes, definitely valid
2 = yes, probably valid
3 = of uncertain validity
4 = no, probably invalid
5 = no, definitely invalid

techniques ranged from probably valid to probably invalid. None of these service agencies applied techniques to screen site-developed instructional materials, and only one service agency (11.1%) applied a technique for their descriptive analysis and evaluation. Three service agencies (33.3%) applied techniques to enable teachers to select site-developed instructional materials whilst eight service agencies (88.9%) applied techniques to assist teachers to implement such materials. In ten (71.4%) of fourteen cases, techniques characterised as informal procedures, based upon a consultative process between a consultant and a teacher, were used for decision-making, although classroom demonstration was used for implementation in four instances (28.6%).

A summary checklist of techniques performed on commercially produced instructional materials at each service agency is shown in Table 3. It is evident from an examination of this table that techniques are applied to commercially produced instructional materials at sixteen service agencies (94.1%). It is apparent that the coverage of techniques at each step in the sequence is extensive. Although few service agencies applied techniques of learner-based verification and revision to commercially produced instructional materials, the subsequent steps of screening, descriptive analysis and evaluation, and decision-making for both selection and implementation, were well represented.

The descriptive characteristics of each technique applied at the sixteen service agencies are shown in Table 4. The descriptions indicate that only two service agencies (11.8%) provide information to publishers on learner-based verification for revising commercially produced instructional materials. Twelve service agencies (75.0%) apply techniques to screen commercially produced instructional materials, although, in all but one case, these techniques are informal procedures based upon inspections of materials or consultations between consultants. Ten service agencies (62.5%) apply techniques for descriptive analysis and evaluation of commercially produced instructional materials, which generally appear to convey valid information on specified characteristics. Of the fifteen service agencies, which apply techniques to assist teachers to select commercially produced instructional materials, fourteen service agencies (93.3%) use informal procedures based upon consultative processes between a consultant and a teacher, whilst sometimes this is supplemented by use of a rating scale. Of the thirteen service agencies, which apply techniques to assist teachers to implement commercially produced instructional materials, ten service agencies (76.9%) use informal procedures based upon consultative processes between a consultant and a teacher, whilst classroom demonstrations are used by five service agencies (38.5%) and written briefs are used by two service agencies (15.4%). In thirty-five (74.5%) of forty-seven cases, informal procedures were used for screening and decision-making.

A summary checklist of techniques performed on commercially produced educational equipment at each service agency is shown in Table 5. It is evident from an examination of this table that techniques are applied to commercially produced educational equipment at only two service agencies (11.8%). In the single case available, the coverage of techniques at each step in the sequence is partial.

The descriptive characteristics of each technique applied at this single service agency are shown in Table 6. The descriptions indicate that informal procedures are used in all instances for screening and decision-making.

2.2.1.4 The Discussion

2.2.1.4.1 Documents

The evidence, provided by an examination of the documents published by the Education Department of Tasmania on issues related to the use of curriculum materials, shows that overwhelming attention is given to resource management. Resource management is discussed in terms of both presenting a coherent policy and a set of practices for schools and resource centres.

Incorporated within the resource management policy, however, is a set of practices on the selection and the evaluation of instructional materials. On various occasions, the treatment of the selection and the evaluation of instructional materials is couched in terms that relate to either resource management of collections or to their use in the curriculum.

On adopting, evaluating and selecting instructional materials, the authors state in Implementation Paper No. 2, Co-ordinate the acquisition of learning materials and equipment, that:

> "It is important that standardised procedures are adopted for the selection of resources... A workable system may operate through the following stages:
>
> (i) Requests for the purchase of a particular item should be submitted to the Resource Co-ordinator who checks that the item is not an unnecessary duplication of an existing resource and that a suitable alternative is not readily available. A central listing of all resources available to the school will facilitate this step.
>
> (ii) Every effort should be made to obtain a valid evaluation of the resource requested. Such evaluation ideally is the first-hand previewing of the item by the prospective user, or where this is not practicable, an objective and reputable review of the item.
>
> (iii) The request, once verified, passes to the Resource Acquisition Committee which should ensure that the resource matches the resource needs already established and then allocate funds or a funding priority".
>
> (Education Department of Tasmania, 1983 *Resource Management Guide for Australian Schools*, Hobart: Education Department of Tasmania, 36)

The process for matching instructional materials to the curriculum has been identified but is inadequately related to the sequence of steps leading from the adoption, the descriptive analysis and evaluation, the selection, to the implementation of materials. In Implementation Paper No. 8, Matching learning resources with the curriculum, three elements are identified in this process: the objectives match; the context match; and the media match. As described, an objectives match is intended to match an instructional material to a teacher's instructional objectives, taking account of variables such as readability and learnability. In a context match, techniques are applied that are likely to identify instructional materials most appropriate to a particular educational context. The intention of a media match is to improve the use of educational products in a variety of media through the use of appraisal forms.

Although the authors of this document have identified two fundamental constituents in a process to match curriculum materials to instructional programs, an effective connection between these constituents has not been established. Furthermore, the techniques that teachers and media personnel are to apply to realise this are unlikely to reach minimum standards of reliability. There is no application of instructional design analysis to establish either internal or external congruence, which need to be determined to achieve intended matches between instructional materials and instructional programs. This general conclusion is confirmed by statements made in the *Learning Resources Review*. In Recommendation 2, the authors of this document recognise the need to improve principals' understandings of the relationship between curriculum needs and adoption, selection and evaluation procedures through inservice teacher education. This

relationship, however, is only established in terms of the provision of appropriate resource management programs in schools and not to applying a technique of instructional design analysis to match curriculum materials and instructional programs validly and reliably. Despite this conclusion, the authors state that:

> "Although the Review, then, concentrates its attention on the mechanics of resource provision, organisation, management and distribution, its importance lies in the effect it may have on the improved use of curriculum resources in learning and teaching. The ways in which students and teachers actually do use such resources would be the subject of a valuable and complementary review".
>
> (Education Department of Tasmania, n.d. *Learning Resources Review*, Hobart: Education Department of Tasmania, 8)

2.2.1.4.2 Interviews

The problems tested in this multi-site case study were that, with an extensive application of informal procedures, there would be lower reliability from measures than is necessary to reduce random errors to an acceptable level, and that, with an incomplete application of the set of techniques in the sequence, there would be lower validity from measures than is necessary to reduce systematic errors to an acceptable level. Neither of these problems could be tested by experimental design because of the qualitative nature of the data. The relationships, firstly, between the use of informal procedures and low reliability and, secondly, between the imperfect sequence of techniques and low validity, are based upon assumptions. Therefore, this discussion, supported by findings related to the problems investigated, is based upon judgements made on the part of the researcher.

The results of the study showed that, on the one hand, there were extensive applications of informal procedures and criteria which did not appear to relate to the instructional design whilst, on the other hand, techniques were not applied consistently at each step of the sequence. These results are consistent with the only research hitherto published on practices of selection and use of curriculum materials in Australian schools. This research was originally reported by Marsh et al. (1981). These researchers then reported on the attitudes of Western Australian primary school principals towards the selection of curriculum materials (Marsh, 1983a), on attitudes of social studies instructors, surveyed nationally at institutions of further education, towards including curriculum materials analysis in preservice teacher training courses (Marsh, 1983b), and on Western Australian teachers' attitudes towards selection issues involving curriculum materials (Marsh et al., 1985).

One can only speculate on the reasons why the staff members of service agencies either rely upon informal, intuitive procedures, rather than use more reliable techniques, or fail to apply techniques more consistently so that each step in the sequence is taken into account. In the former case, it can be surmised that most subjects surveyed in the case study adapt informal procedures to suit their contextual requirements, but do not seem to be aware of the availability of more reliable techniques. In the latter case, most subjects did not appear to recognise that an inherent sequence of steps for analysing instructional materials prevails between the stages of product development and implementation. One can conjecture that such informal procedures have developed spontaneously as practical mechanisms, based upon inherently generic principles.

A limitation, imposed upon studying the variables associated with the analysis of instructional materials and the application of this information to their uses in classrooms, is the qualitative characteristics of much of the data. State-of-the-art methods for researching these attributes have not identified variables capable of treatment through

statistical analysis, but rather they have examined invariable elements that are more appropriately analysed qualitatively. Quantitative analysis is currently restricted to measuring the amounts of these elements. Consequently, the design of this multi-site case study was confined by this restriction and, therefore, it is impossible to provide the kind of quantitative data which would make the use of experimental design a valuable tool for investigating manipulatory variables.

2.2.2 Evidence from Other Australian States

2.2.2.1The Research Problem

The researcher also decided to elicit information on techniques to evaluate educational products used by education departments in other Australian states and territories. It was believed that descriptive assessments of these techniques would enable the researcher to extrapolate, to a national setting, the findings of documentary evidence and the multi-site case study undertaken in the Tasmanian context.

2.2.2.2 The Method

To obtain this information, appropriate staff members were identified in other education departments: the New South Wales Department of Education; the Ministry of Education, Victoria; the Education Department of South Australia; the Queensland Department of Education; the Ministry of Education, Western Australia; the Australian Capital Territory Schools Authority; and the Northern Territory Department of Education. These staff members were then contacted through correspondence.

2.2.2.3 The Results

Information on procedures to evaluate educational products was obtained from the New South Wales Department of Education, the Ministry of Education, Victoria, the Queensland Department of Education, the Education Department of South Australia and the Ministry of Education, Western Australia. The results of this survey are now reported in detail.

2.2.2.3.1 New South Wales Department of Education

A report by the New South Wales Department of Education (1981) led to the establishment of two committees, the Equipment Committee and the Learning Materials Committee, which recommend adoptions of educational products to a Supply Co-ordinating Committee. Each committee undertakes a similar procedure for adoption of educational products: identification; screening; advising on needs; initiating research; advising on dissemination of information on products; and recommending the establishment of working parties. Members of these committees co-operate with Curriculum Project Teams and Curriculum Implementation Co-ordinating Groups in order to gain access to information on commerical products. The Curriculum Project Teams and Curriculum Implementation Co-ordinating Groups also recommend development of non-commercial, instructional materials to the Director of Services, New South Wales Department of Education.

Once an educational product has been adopted, a descriptive analytic and evaluative review, termed a specification, is undertaken by a staff member of the New South Wales Department of Education. This specification is based upon the following criteria: educational rationale - for what purpose the item is needed in schools, how the item is to be used in schools, where in schools the item is to be used, and what personnel in schools

will use the item; performance objectives; boundary conditions - a statement of physical description which is judged against a specified minimum or maximum standard; and technical details.

2.2.2.3.2 The Ministry of Education, Victoria

The Ministry of Education, Victoria (1984) has published a guide to facilitate the appraisal of audio-visual materials. A set of guidelines, consisting of three parts, is provided for descriptive analysis and evaluation of audio-visual materials: educational considerations (educational objectives, total effect, curriculum area, appropriate level, style, continuity, running time, appropriate medium, economic justification, and utilisation); technical considerations (image quality, techniques, colour, sound); and other factors (aesthetic considerations of the context).

2.2.2.3.3. The Queensland Department of Education

As part of the Library and Resource Services Branch of the Division of Curriculum Services, the Queensland Department of Education has established a Resource Evaluation Team. This team uses an appraisal form to screen basic instructional materials, supplementary instructional materials, audio-visual materials and computer courseware. Separate appraisal forms are used by consultants to screen curriculum materials for special needs groups. Two forms, one for print materials and one for non-print materials, are used for descriptive analytic and evaluative reviewing of instructional materials. Reviews are provided for all subject areas across all grades. A journal, *Reviewpoint*, is published to report these reviews to teachers in both state and independent schools to aid decision-making by selectors.

The form, Resource Evaluation - Books, consists of five sections: bibliographic information; content; presentation; suitability (grade level, special needs groups, curriculum role); special features (physical description); and reviewer's response (recommendation for selection). The form, Resource Evaluation - Non-book Material, consists of six sections: description of item (components); method of evaluation; subject matter (contents); level; ratings (quantitative ratings on teachers' notes, student guide, photography, sound organisation and overall rating); and general evaluation (on accuracy, currency, bias, general appeal, relevance to courses and technical aspects).

A standard appraisal form is used to screen educational equipment for purchase. Quantitative ratings on sixteen criteria relating to technical conditions of the equipment are incorporated in this form. Ratings are made on the basis of information completed on separate checklists. The checklists are used also to compile descriptive analytic and evaluative reviews of audio and video hardware and computer hardware, which are published in a *Resources Catalogue*.

The Schools Computing Service uses a form, Computer Software Report, to screen and to compile descriptive analytic and evaluative reviews of courseware, which are presented to teachers through a journal, *Sugar*. This form consists of five sections: curriculum match; program description (instructional mode, general description, educational objectives); presentation (rating scale on technical aspects); overall comment (recommendation for adoption); and special notes.

2.2.2.3.4 The Education Department of South Australia

The Education Department of South Australia (1987) has published a set of guidelines for the selection and the access of educational products. Selection of educational products should be guided by eight principles: to relate materials to a school's curriculum

policy and instructional program; to support a curriculum which fulfils pluralistic aims; to encourage multiculturalism; to motivate positive attributes towards citizenship; to be relevant to students' needs; to provide for discrimination in students' choices; to represent a range of views; and to be based upon the relative strengths of materials. Specific guidelines, which follow a sequential procedure, are recommended to schools' staffs: development of a selection policy; responsibilities of teachers, students and parents; and developing guidelines for implementation, which includes frameworks for selection and review.

The Educational Production Service of the Education Department of South Australia uses Evaluation Form - 16mm Film/Video to appraise audio-visual materials for adoption.

2.2.2.3.5 Ministry of Education, Western Australia

School personnel and consultants use a set of three, parallel forms - Primary Fiction Appraisal Form, Non-fiction Appraisal Form K-12, and Non-book Appraisal Form K-12 - to provide descriptive analytical and evaluative reviews, reported to teachers to aid decision-making for selections. A journal, *Fiction Focus*, is published to report reviews of supplementary instructional materials to teachers.

Each form in the set consists of four sections: criteria for identifying the medium of the material; criteria, based upon rating scales, for evaluating production quality; criteria, based upon rating scales, for evaluating content appraisal (product description); and criteria for descriptive analysis of the contents and biases in the material. Annotated background information is added to each descriptive analysis. Each of the forms is applied to develop descriptive analytical and evaluative reviews.

2.2.2.4 The Discussion

Although the small number of documents and instruments provided by Australian education departments, outside Tasmania, does not comprise a representative sample, there is sufficient variety in these materials to allow the researcher to form judgements on the characteristics of techniques used to select and to evaluate educational products. An examination of these documents and instruments supports a judgement that the characteristics of the practices recommended for the selection and the evaluation of educational products are similar to those undertaken in the Tasmanian context. There is, however, greater attention given to the provision of selection policies that will meet the needs of the curriculum and instructional programs. On the other hand, the emphasis upon resource management is absent, although its implications are taken into account.

The instruments used for descriptive analysis and evaluation of educational products reflect procedures that are similar to those used in Tasmanian education. The highest level of application achieved in any one of these instruments was descriptive analytical and evaluative review.

2.3 Conclusion

The evidence provided by this survey shows that reliable techniques for adopting, for evaluating, for selecting and for utilising educational products have yet to be applied widely in Australian education. This conclusion is supported by the data gained on procedures for selection and use of instructional materials in Australian schools provided by Marsh et al. (1985).

In part, the responsibility for the prevailing inadequacy must be placed with the failure of Australian educational agencies both to address the evaluative issues satisfactorily and to co-ordinate their activities effectively. In the past, the failure of either The Australian Council for Educational Research or the Curriculum Development Centre to accomplish an outcome useful to Australian education appears to be as much a consequence of an unfortunate combination of circumstances as ineffectual actions. Already alluded to earlier in this chapter, this combination of circumstances has resulted in neither organisation assuming responsibility for initiating an effective research and development program resulting in the implementation of an innovative service to Australian schools. In spite of the work on instructional design analysis undertaken by Jeffery, and Piper (1976) at The Australian Council for Educational Research and the attention given to this issue by the Curriculum Development Centre in publications (Curriculum Development Centre, 1977; and Davis, 1981), it seems that neither organisation has been capable of capitalising upon such activities to translate this research and development into provision of a service to Australian schools. It is apparent that the substantial costs of investment, firstly, in research and development and, secondly, in disseminating the innovation, have been perceived as beyond the funding provisions of Australian education in the past. The establishment of a national database of annotated information on instructional materials through the Australian Schools Catalogue Information Service, however, now makes the development of a nationwide service of evaluations of educational products an attainable proposition both financially and technically.

The aspects of the survey that relate to the national context have indicated that Australian education, however, is generally lacking a foundation of research and development activities upon which to support implementation of such a service. This verdict is verified by empirical evidence gathered from state education departments in Australia. The instruments and procedures used are characterised by their developers' failures to take account of current understanding on the sequence of techniques, and the criteria used do not appear to relate to instructional practices. Two trends, identifiable at the state level, indicate that it is imperative in the immediate future to improve the reliability and validity of such techniques applied to instructional materials. Firstly, state education departments in several of the more populous Australian states are implementing organisational frameworks to provide statewide evaluations of educational products; and secondly, there is an emerging awareness of a need to rationalise such activities.

Empirical findings derived from the survey of service agencies of the Education Department of Tasmania identified the widespread use of informal procedures which, however functional and useful in specific educational contexts, are not supported by the comprehensive application of techniques that would provide standardised and reliable information on matching instructional materials to the instructional design of educational programs. Generally, techniques for learner-based verification and revision are only extensively applied to curriculum materials developed by the Education Department of Tasmania; there is no evidence to support either the consistent use of standardised criteria or the necessity to report the results of pilot-tests or field-tests. Screening of commercially produced materials is almost entirely dependent upon the use of informal procedures with the predominant criterion based upon the material's intrinsic philosophy matching the prevailing educational philosophy. Although several examples of competently produced descriptive analytic and evaluative reviews were identified during the survey, the respondents appeared to be ignorant that more reliable techniques, based upon instructional design analysis, are available. Both the steps of selection and

implementation depend upon the use of informal procedures. Rating scales, usually appended to the descriptive analysis and evaluative review of a material, are sometimes used to present recommendations for selection. Classroom demonstrations are often used to recommend the implementation of materials. These observations suggest that the staff members of service agencies are failing to report both reliable and valid information on instructional materials to teachers, probably for two reasons: the techniques they apply do not relate such information to the instructional design; and an emphasis is placed upon managing curriculum resources rather than tackling the more pertinent issues of accomplishing a better match between curriculum materials and educational programs in order to improve student achievement.

Marsh et al. (1985) have provided evidence on the practices of selection of curriculum materials prevailing at primary schools in Western Australia, which gives credence to the contention that the inadequacies which occur at service agencies in Tasmania are widespread. Three designs were administered in two stages to collect data in this project. The first stage comprised two designs: firstly, case studies were conducted in two schools; and secondly, structured interviews were conducted with teachers and principals in selected schools. The data collected at the first stage were used to develop two questionnaires for the second stage. These questionnaires, one each for gathering information on social studies and mathematics, were administered to separately drawn, simple random samples of forty schools. Each questionnaire was designed in alternate forms, one for principals and the other for teachers.

The results from the surveys of teachers identified problems reflecting inadequacies of the prevailing selection practices in the schools studied for both social studies and mathematics. These problems included lack of time to select curriculum materials, not knowing which curriculum materials were available and lack of access to curriculum materials. Principals also experienced problems in selecting curriculum materials, which included difficulties in selecting materials to suit most teachers in their schools, the availability of too limited amounts of funding for purchases, and being required to order materials without preliminary inspections. Furthermore, the results suggested that status position, as much as role performance, influenced the selection practices in these schools. Although only a fifth of principals had sole responsibility for organising instructional materials in their schools, principals often formed part of a staff group that performed this task, particularly in relation to mathematics materials. On the other hand, both teacher-librarians and library aides took a major role in assisting teachers to select instructional materials for social studies. It was also identified that approximately one-third of teachers surveyed were involved in making decisions on selecting instructional materials for their classrooms.

These researchers concluded that there appeared to be insufficient consultation between principals and their staffs on the selection of instructional materials, which may have resulted, firstly, from a lack of school policies concerning the selection of materials, and secondly, from teachers having failed to identify materials which they considered to be the most appropriate for use in their classrooms. This situation is understandable considering that teachers would be only able to rely upon intuitive process to provide this sort of information.

The evidence from the survey has shown that the staff members of service agencies of state education departments responsible for providing this information to teachers do not apply techniques that are capable of achieving a valid match between instructional materials and instructional programs. One can predict that a substantial improvement

to the situations in both service agencies of state education departments and schools in Australia can be best initiated through research and development on adapting techniques available from foreign sources to Australian conditions, through field-testing and modifying procedures to establish a national database of information on educational products, and through disseminating this information to all sections of the educational community in Australia.

CHAPTER 3

THE AMERICAN CONTEXT

In this chapter, the author provides a descriptive account of four American educational organisations, which have as their missions, evaluating and selecting instructional materials and researching issues involved in the uses of educational products. The organisations are the Educational Products Information Exchange (EPIE) Institute, the Social Science Education Consortium (SSEC), the Council on Interracial Books for Children (CIBC), and the Women on Words and Images (WOWI).

This account is then followed by a comprehensive survey of literature on these issues in the *Resources in Education* (RIE) database of the Educational Resources Information Center (ERIC). The aim of this account is to identify educational organisations contributing solutions to these problems at national, state and school district levels. Interwoven with this survey is an account of current textbook adoption practices.

The purpose of this comprehensive survey of the American setting is to provide a comparative study, which may serve as a benchmark for judgements to be made on directions for planned change in the Australian context.

3.1 Agencies and Programs

The author has selected four American educational organisations for detailed examination in this section. The touchstone for selecting these four organisations was that the programs of each entail collecting information on print materials, analysing print materials and disseminating information on print materials.

The Educational Products Information Exchange (EPIE) Institute, the first to be considered, is an independent, self-supporting agency providing services exclusively related to these issues to paying customers on a national scale. The second, the Social Science Education Consortium (SSEC), also an independent, self-supporting agency, provides a range of programs and services on social studies and social science issues, including information on instructional materials. The Council on Interracial Books for Children (CIBC) is an independent, self-supporting agency which, in promoting multiracial and multicultural approaches in children's literature, provides information on both racist and sexist biases. The last organisation to be considered is the Words on Women and Images (WOWI), also an independent, self-supporting agency, which has conducted research on identifying sexist biases in instructional materials.

3.1.1 The Educational Products Information Exchange (EPIE) Institute

The Educational Products Information Exchange (EPIE) Institute was established as an independent organisation on 1 August 1967, although formerly operating as a division of the Institute of Educational Development. Komoski (1967) described the planning for the EPIE Institute during its formative years in a report contracted by the Office of Education, U.S. Department of Health, Education and Welfare.

3.1.1.1 The Developmental Phase (1967-1970)

Komoski described the initial development of the EPIE Institute, as follows. At a meeting convened early in December 1966 by the designers of the EPIE Institute and the representatives of educational administrative organisations, an EPIE Advisory Board was constituted. Comprising thirty associations, the EPIE Advisory Board was responsible for auditing procedures as well as contributing to the development of the EPIE Institute. At the same time, some thirty consultants from a variety of sources met to advise on the design of the systems to be used by the EPIE Institute, on the training of information gatherers, on the development of questionnaires and on methods for analysing instructional materials.

During the early part of 1967, three significant issues for developing the EPIE Institute were considered at meetings: the definition of useful product information types and services; the design of a data system for the exchange of information; and the development of information gathering techniques.

It was decided that three types of information should be collected by the EPIE Institute: product producer information; product analyst information; and product user information. It was determined that four modes of subscriber service should be provided by the EPIE Institute: a broadcast mode for transmitting generalised product information; a responsive mode for acting upon standard inquiries with data in the system; an interactive mode for dialogue between the EPIE Institute and a subscriber beyond standard inquiry protocols; and a customised mode for tailoring system and field studies. It was recognised that each of the modes could not be offered simultaneously at the commencement of operations, so it was determined that only the broadcast mode be introduced immediately.

The design of a data system for the exchange of information was considered during the course of the meeting in December 1966. The design of this system for the EPIE Institute was contracted to the Community Systems Foundation, Ann Arbor, Michigan. In April 1967, a report submitted by the Community Systems Foundation contained a proposed system for computer-based storage and retrieval of information. This proposal was modified, however, to more closely meet the operational requirements of the three-year, developmental phase for the EPIE Institute.

Three aspects for developing information gathering techniques were considered by the consultants: assembling producer information; developing analyst information; and collecting user information. A process, developed for assembling information from producers, consisted of drawing up an exhaustive list of characteristics about a particular type of educational product and then submitting the list to user groups and producer groups for judgements. The results were discussed at a meeting at which a list of the most significant characteristics was drawn up. Representative school personnel were then consulted with the view to refining the list.

At the Second Lake Mohonk Work Conference, 8-10 April, 1967, the consultants considered the variables involved in the analysis of educational products: the use of checklists and prose statements; the units of analysis; the analysis of textbooks and supplementary materials; the dependability of inferences made by analysts; the training of analysts; and the development of forms. Attention at this conference was given to experimental work being conducted at the University of Florida and the University of Illinois to develop practical analytic techniques. The development of techniques to report on user satisfactions of teachers, administrators and students was discussed. Such information gathering was to be conducted by school personnel, who had received extensive training during August 1967.

3.1.1.1.1 Pilot Studies

The consideration of these issues led to the conduct of two pilot studies which were intended, in the first instance, to pilot-test the types and modes of EPIE services and, in the second instance, to field-test the EPIE system. The two pilot studies ran concurrently between 1968 and 1970.

3.1.1.1.1.1 The Four-State Co-operative Project

Once the types and modes of services were delineated, it was decided to pilot-test EPIE's collection procedures, its analysis techniques, its operational definitions and its dissemination system. The first pilot study, the Four-State Co-operative Project, was conducted in New York State, Pennsylvania, New Jersey and Delaware during 1968 in co-operation with two regional educational laboratories: the Eastern Regional Institute for Education (ERIE) and the Research for Better Schools (RBS).

Instruments and techniques to examine science materials and their uses were administered to staffs at a sample of sixty schools selected from a population including all public elementary schools in these states. The project constituted the first year of operation of the EPIE Institute.

3.1.1.1.1.2 Pilot EPIE

Pilot EPIE was designed to field-test the system developed for the EPIE Institute. The study was intended to implement the short-term goals for operating the EPIE Institute as well as gradually incorporating long-term goals. The study was initiated during 1968 and extended throughout 1969 and 1970. Sixteen objectives were achieved during the course of the Pilot EPIE study: data collection instruments and techniques were evaluated and revised; observers, interviewers and other information gatherers were trained; producer information was collected; analyst information was collected; user information was collected; user interviews were conducted; producer, analyst and user information was synthesised; development of software for the special request file was completed; the storage and retrieval system was evaluated and updated; broadcast information was published in the *EPIE Forum*; research on patterns of information use was conducted; new methods of querying the system and responses were identified and established; field agents were trained; limited trial use of the system by a new group of subscribers was explored; synthesised information in broadcast, responsive and interactive modes was offered; and operation of the customised mode was commenced.

3.1.1.2 The Operational Phase (1971-1988)

Once the developmental phase, conducted under Pilot EPIE, had concluded in December 1970, the EPIE Institute commenced and expanded formal operations during

the 1970s. During this period, the EPIE Institute established a service for collecting, analysing and disseminating descriptive information on educational products to all sections of the American educational community on a national basis. At the close of this decade, this service had also extended to the western provinces of Canada.

Today, the EPIE Institute operates from the campus of the Teachers College, Columbia University, New York City, where a Program Development and Research Office is maintained, whilst a Western Projects Office is located at Kenwood, California, a Northeastern Projects Office is situated at Dresden, Maine, and a Midwestern Projects Office is situated at Clayton, Missouri. Since early 1988, the EPIE Institute's Software Evaluations Office has been located at The Palmer School, C.W. Post Campus, Long Island University, Brookville, New York. The major services provided at present by these offices of the EPIE Institute are described in the next section.

3.1.1.2.1 Services

3.1.1.2.1.1 Outreach

At the commencement of this period, a foundation grant was provided to promote the EPIE Institute's services to schools in the United States. In 1975, 1,500 of the 22,000 school districts in the United States and Canada were receiving services provided by the EPIE Institute (American School Board Journal, 1975). In 1981, the number of school districts served by the EPIE Institute had increased to 2,000 (School Library Journal, 1981).

3.1.1.2.1.2 Consumers' protection.

The EPIE Institute was established in 1967 at a time when Ralph Nader and the consumer protection movement were a significant influence upon American public life. The major aim of the EPIE Institute is to protect educational consumers by exchanging information on educational products. Information is gathered from teachers, media specialists, students, state departments of education and publishers, as well as from EPIE's extensive evaluations of curriculum materials and laboratory tests of educational equipment. This information is collected in consumers' reports that are, in turn, made available to EPIE members to aid responsible adoption, selection, and implementation of educational products. The EPIE Institute also supports more overt action to protect educational consumers by acting upon complaints lodged by its members through its newsletter services. These actions might relate to faulty equipment or materials, not receiving adequate service from a company, or being subjected to questionable or unethical sales strategies.

3.1.1.2.1.3 Newsletters

The EPIE Institute currently publishes three newsletters: *EPIEgram Materials*; *EPIEgram Equipment*; and *MICROgram*. The newsletters are used for two main purposes: to keep school personnel informed on educational consumer issues; and to provide feedback information from users to the EPIE staff, who, for instance, may then commence action with a producer to improve a fault in a product.

3.1.1.2.1.4 Textbooks

The EPIE Institute provides evaluations of textbooks in two media: by print through EPIE Reports; and on-line through the Textbook PRO/FILE System. The EPIE analysis instrument is applied by evaluators to develop four-to-six page analyses of the intents, contents, teaching-learning activities, and means of student assessment of all major

textbook programs from grades K to 12 in reading, language arts, mathematics, sciences and social studies.

3.1.1.2.1.5 Audio-visual Equipment

In 1974, the Ford Foundation funded the EPIE Institute to establish a laboratory testing program for evaluating all types of audio-visual equipment. Since that date, EPIE Reports have been published on cassette recorders, 16mm projectors, cassette duplicating equipment, overhead projectors, video-cassette recorders, and sound-slide projectors. During this period, the EPIE Institute, in collaboration with the Association of Audio-visual Technicians (AAVT), has published a biennially, updated *Annotated Audiovisual Parts Directory*.

3.1.1.2.1.6 Computer Courseware

Information on computer courseware available for American schools is reported by the EPIE Institute through two media: by print in *The Educational Software Selector* (TESS); and on-line through the Microcomputer Courseware PRO/FILE System.

First published in 1984, *The Educational Software Selector* comprises annotations of both courseware (classroom-orientated software) and administrative software. Several descriptors are used to annotate each entry: its name; its supplier's catalogue number; its type, in terms of instructional or operational mode; its grade level range; its uses, in terms of audiences; its scope, by topic and by duration of use; its grouping; by description of its operational attributes, its configuration, in terms of hardware-software requirements, and its price; its components; its availability; its review citations; and its user site contact.

The EPIE Institute commenced the development of the Microcomputer Courseware PRO/FILE System in collaboration with the Microcomputer Center at the Teachers College, Columbia University during 1981. The EPIE analysis instrument is applied by evaluators to develop two-to-four page, comparative evaluations of all major software curriculum packages. The Microcomputer Courseware PRO/FILE System also includes evaluations of pre-screened, shorter programs that have met specified criteria for courseware.

3.1.1.2.1.7 Computer Hardware

Analyses of computer hardware available to American schools are reported on-line by the EPIE Institute through the Microcomputer Hardware PRO/FILE System. Analyses comprise of four-page, comparative evaluations of the major microcomputer systems and peripherals currently being marketed to American schools. The evaluations are based upon laboratory testing by the Consumers Union of the U.S., combined with reports from school users.

3.1.1.2.2 Techniques and Procedures

In order to provide these services to the educational community in North America, certain techniques and procedures are applied by the EPIE staff to provide qualitative information on educational products. These techniques and procedures are discussed in this section.

3.1.1.2.2.1 Applications to Develop Instructional Materials

The Educational Products Information Exchange Institute (1980a) has reported on its activities to implement procedures for learner verification and revision. These procedures encompass gathering and analysing data obtained from field-testing products

with appropriate groups of learners and then revising the products on the basis of these results.

Between 1967 and 1971, the EPIE Institute identified that 99 percent of instructional materials were not being verified and revised on the basis of data gathered from learners. Following congressional testimony by Komoski in 1971, the EPIE Institute has promoted the use of learner verification and revision as a means to improve the learning effectiveness of educational products. As a result of this testimony, the application of learner verification and revision became a particularly controversial issue in American education. This arose because of the efforts by the EPIE Institute to effect legislative enactments in California in 1972 and Florida in 1974, requiring learner verification and revision as a prerequisite for adoption. In response to this publicity, the EPIE Institute established a National Learner Verification and Revision Task Force in 1974, charged with the tasks of defining the process inherent in learner verification and revision and developing practical guidelines for its implementation by both publishers and educators. The Guidelines for Reporting and Assessing LVR Activities, published as a result of the work of the National Learner Verification and Revision Task Force recommended, on the part of publishers, that instructional materials should incorporate an instructional design, that intended learner options be investigated, that the conditions of use of the product should be specified, that techniques for gathering feedback from learners may be included, that validation groups used in the learner verification and revision process be reported, that the analysis of findings be reported, and that improvements to the material should be made on the basis of these findings. Although few publishers adopted these Guidelines, a set of model legislation, derived from the Guidelines, was developed by the Lawyers' Committee for Civil Rights Under Law and then considered for adoption by teachers in Virginia and legislators in Michigan and Maryland during 1975 and 1976. At the same time, the legislation enacted in Florida was bolstered by the same set of Guidelines.

During the 1975-1976 school year, the Bureau of Audiovisual Instruction of the New York City Board of Education conducted a pilot study to gather data in thirty-two school districts within New York City for the purpose of determining a policy on learner verification and revision. This pilot study, together with the work of educators and legislators to implement the Guidelines failed during 1977 because support was not forthcoming from publishers. In spite of the failure to implement the Guidelines successfully, a survey of twenty-eight junior high school textbooks conducted by the EPIE Institute substantiated claims of an increasing use of learner verification and revision by publishers.

3.1.1.2.2.2 Applications to Select Instructional Materials

Selection of instructional materials by committees is advocated by the EPIE Institute. Selection committees should be based locally and should consist of administrators, teachers, parents, students and other members of the community. Systematic training of committee members is viewed as essential. Selection involves determining prospective users for particular instructional materials and is governed by the instructional design of the materials and the characteristics of the setting in which the materials will be used.

Sequential steps to be taken by selection committees are to review and to examine available materials within a field of interest through the use of checklists and rating scales. Then, selection committees screen these materials by means of appraisal forms based upon co-operatively agreed-upon criteria related to both the materials and the

appropriate instructional setting. Komoski (1986) reported that "recently, EPIE has added the use of computer-generated curriculum alignment reports as an important element to be used in the screening process". On the basis of this screening, selection or production of materials can be made within a 'decision arena' of five alternative courses used alone or in combination: continued use of existing materials within existing programs; selection of materials on the basis of learner and teacher characteristics and approach to instruction; development of materials locally, regionally, or at a state level; initiation of inservice training of personnel in the use of materials and implementation of programs; and initiation of broader curriculum development for the appropriate programs.

3.1.1.2.2.3 Applications to Evaluate Instructional Materials

The instruments used by the EPIE Institute to evaluate educational products are adaptations of an original instrument published by Eash (1972b). Eash's instrument contained five sections: I Objectives; II Organisations; III Methodology; IV Evaluation; and V Comment.

Following adoption by the EPIE Institute of Eash's instrument, Elliott (1985) has reported that the first version of EPIE form A was developed in response to feedback from participants at a workshop in which Eash assisted the EPIE Institute train teachers in California to use his instrument to analyse textbook programs in reading. The fundamental alterations that occurred in the transition from Eash's instrument to EPIE form A are best related in Elliott's words.

> "The main issue that led to the feedback and the revision focused on whether EPIE analyses should favor some specific instructional design provisions over others or simply describe the provisions made in each set of materials and leave it to the selector to express preferences. In the Eash instrument with which we started the training at Los Angeles, analysts were asked to rate a number of instructional design features on a scale of ten (e.g., fully stated 'behavioral' objectives were given the highest rating and very general outcome statements the lowest). In the EPIE form A version that emerged from these sessions, analysts were asked to describe each instructional design provision as precisely as possible (e.g., Objectives give [check all that apply]: a. expected behavior(s), b. conditions under which it/they should occur, c. performance standard, d. other _____).
>
> The original Eash instrument was based on a single point of view about what constitutes good instruction; EPIE form A allowed for alternative views and stressed making a good match between: (1) user needs and preferences and (2) one or more of a number of different approaches built into the sets of materials available on the market...."

A significant feature of this instrument has been its capacity for adaptation to different educational contexts and for revision, based upon criticisms received from educators who use EPIE Reports. For instance, during 1984, major revisions were undertaken to the version of the EPIE analysis instrument applied to the analysis of textbooks (Educational Products Information Exchange Institute, 1985). This revised version comprises four sections: Contents (scope, content organisation, and other content considerations); Methodology (typical lesson/learning approach, levels/types of thinking in learning activities, provision for extension/enrichment activities and comment on methodology); Tests and Assessment (description of provisions, comments on tests and assessment); and Other Considerations (program implementation, technical quality of program materials, summary and goodness of fit, analyst's summary comment). As a result of these changes, Elliott indicated that "future EPIE Reports will contain more critical comments about such matters as the clarity of learning activity instructions and the 'considerateness'

of the text narrative, while maintaining neutrality concerning instructional approaches or philosophies".

Several significant features have been incorporated within the EPIE analysis instrument: instructional design analysis; identification of biases, such as racism and sexism, in instructional materials; and the matching of readability levels of instructional materials to students' reading levels.

3.1.1.2.2.3.1 Instructional design analysis

An instrument must be based upon a model of curriculum development in order to provide valid analyses of curriculum materials. Such an application is termed instructional design analysis. When the EPIE analysis instrument is applied to analyse a curriculum material, qualitative information is elicited for each of the constructs or elements of the curriculum in terms of Tyler's objectives model: the intents; the contents; the teaching-learning methodology; and the means of student assessment.

By applying instructional design analysis to curriculum materials, an analyst uses EPIE analysis instrument to perform several functions: descriptive analysis, which concentrates upon elucidating the rationale and structure; evaluation, which provides the capability to judge curriculum materials against a range of criteria; and decision-making, which provides judgements allowing users to select and to implement curriculum materials.

Once the instructional design analysis of a curriculum material has been determined, an analyst is in a position to make professional judgements on questions of 'goodness of fit' or congruence. 'Goodness of fit' or congruence is used to apply the results of descriptive analysis and evaluation to determine the characteristics of both selection and implementation types of the decision-making function and, therefore, is the main purpose of conducting instructional design analysis of materials and programs. The two forms of congruence - internal and external - are now discussed.

3.1.1.2.2.3.1.1 Internal congruence

Internal congruence refers to the degrees of congruence between the four constructs of the curriculum and among the constituents of each construct. In the first instance, an analyst applying the EPIE analysis instrument, will ask questions, such as: Does the scope of the contents fulfil the developer's expressed or implied purpose, and explicitly stated aims and objectives? In the second instance, the analyst will ask: Are the goals and objectives consistent with the developer's expressed purpose? Statements based upon answers to such questions provide information on the integrity of the instructional design within a curriculum material.

3.1.1.2.2.3.1.2 External congruence

External congruence refers to a measure of the 'goodness of fit' between the constructs of the curriculum and the environment in which the curriculum material will be implemented. The environment includes the educational program, the intended learners, the requirements of the teacher and the requirements of the learner. If the instructional designs of both a curriculum material and an intended instructional program have been analysed in the same way, a decision-maker can base such 'goodness of fit' upon a judgement of how well a material is likely to match a local program, if forms of learner-based verification (pilot-testing and field-testing) are unavailable.

3.1.1.2.2.3.2 Identification of biases

In collaboration with the Council on Interracial Books for Children (CIBC), New York City, the EPIE Institute conducted a research project during 1974 to determine the characteristics of racist biases in instructional materials and to develop criteria for investigating racist biases in instructional materials (Educational Products Information Exchange Institute, 1975: 27-54). At the same time, the EPIE Institute contracted Women on Words and Images (WOWI), Princeton, New Jersey, to conduct research on the characteristics of sexist biases in instructional materials and to develop criteria for investigating sexist biases in instructional materials (Educational Products Information Exchange, 1975: 55-84). On the basis of this research, criteria have been incorporated within the EPIE analysis instrument for evaluators to report both racist and sexist biases.

3.1.1.2.2.3.3 Matching readability levels of instructional materials to students' reading levels

An instrument, the Degrees of Reading Power, based upon the Bormuth readability formula, has been developed by the New York State Department of Education (1980). The Degrees of Reading Power can be employed for diagnostic assessments of both students and instructional materials. Three main concepts are employed in the Degrees of Reading Power: the assessment of students' reading abilities through the use of cloze passages; the assessment of the readability of materials; and the computer-based matching of materials of appropriate difficulty to students.

Komoski (1982) reported that the Degrees of Reading Power was first employed for these purposes by the EPIE Institute during January 1982 at a group of elementary schools in New York City and on Long Island. Since 1984, these measures have been incorporated into evaluations of textbooks reported in the Textbook PRO/FILE System.

3.1.1.2.2.4 Applications for Curriculum Alignment

Curriculum alignment is based upon a principle that student achievements can be improved by aligning the objectives, instruction through both materials and practices, and assessment. Developed through a collaborative project between the Los Angeles Unified School District and the Southwest Regional Laboratory for Educational Research and Development, Los Alamitos, California (Niedermeyer and Yelon,1981; Scott, 1987), curriculum alignment represents an effective way to match the use of different types of educational products - textbooks, supplementary materials, tests, computer courseware and videotapes - to the elements of the instructional design in the curriculum.

During 1985, the EPIE Institute developed and piloted a comparable service in curriculum alignment by modifying and extending an earlier program: the Text/Test Matching Service. The Curriculum Alignment Services for Educators (CASE) provides information in a database, the Integrated Instructional Information Resource (IIIR), on textbooks, audiovisual materials, computer software, supplementary materials, and both norm-referenced and criterion-referenced tests, which can be aligned with a school's curriculum objectives. As well as allowing teachers to select those materials that are aligned to their programs in a particular subject area, the Curriculum Alignment Services for Educators also allows teachers to check the potential non-alignment of educational products.

Komoski (1986) provided the following description of the Integrated Instructional Information Resource database and intended, future developments in its implementation.

> "The information structure of the database begins with the identification of a broad range of curriculum descriptors (topics, processes, attitudes etc.) for a given curriculum area. These

descriptors are deliberately wide enough in range to enable us to describe and analyse very traditional curriculum materials, and also materials that might be considered by some to be quite avant-garde. In fact, some descriptors, based on the work of leading edge thinkers in curriculum go beyond any materials currently available to schools. In short, this universe of curriculum descriptors may be thought of as a kind of social document that describes where curriculum has been, where it is today, and where it might be going in the future. As a result, the IIIR Database may be used for designing and updating curricula as well as analysing current curricula...

...Our next step in developing the potential of the IIIR Database for teachers' use will be to complement the IIIR Database with a modular instructional management system that teachers may use to draw on the IIIR Database for a variety of teaching tasks. These modules will enable teachers to use the database to design lessons, record student progress, and assess the differential effectiveness of specific teaching strategies and materials.

A number of state education agencies that have been using the IIIR Database agree with us that the database, when complemented with instructional management for teacher use, will become an extremely important tool through which teachers' instructional skills may be honed".

Funded by grants from the Carnegie Corporation of New York, the Ford Foundation, the Richard Lounsbury Foundation and supported by the Council of Chief State School Officers, both the Integrated Instructional Information Resource and the Curriculum Alignment Services for Educators are being implemented at present in school districts in different parts of the United States. In 1986, services were commenced in mathematics and science for grades K to 8, followed in 1987 by services in language arts and reading. By the end of 1989, the Integrated Instructional Information Resource will be operating for mathematics, science, language arts, reading and social studies.

Komoski (1987) has elaborated upon his description with statements on how the Integrated Instructional Information Resource can affect five basic principles of curriculum and instruction derived from questions Tyler (1949) stated to define his framework.

1. What educational purposes should a school seek to attain?
2. What educational experiences can be provided that are likely to attain these purposes?
3. How can these educational experiences be effectively organised?
4. How can we determine whether these educational purposes are being attained?
5. How can a school maintain a systemic balance among the activities called for by the first four questions?

Komoski states that the Integrated Instructional Information Resource addresses the first basic principle by providing a set of curriculum descriptors to assist in:

"building locally developed curricula. By using this adaptable set of descriptors on a special curriculum design spreadsheet, curriculum committees can explore curriculum 'what-ifs' and continually order and reorder a school's curriculum, subject area by subject area, grade by grade;

analyzing, correlating, and comparing the subject matter content, and the cognitive processes embedded in textbooks, other learning materials, and tests to the content and processes called for in a school's curriculum;

documenting and tracking the evolution of curriculum thinking and practice over time within a district, a state, or across states; and

using state and nationally recommended curriculum standards to inform local curriculum development. For example, the Resource's descriptors have been used to code state curriculum guides and such national-level standards as those of the National Council of Teachers of Mathematics. This means that schools can use the Resource as a means of informing their curriculum work with these state and national efforts to improve curriculum planning."

(Komoski, P.K., 1987, *Educational Technology: The Closing-in or the Opening-out of Curriculum and Instruction*, Syracuse: ERIC Clearinghouse on Information Resources, 27-28)

The Integrated Instructional Information Resource also provides information related to the second and third pronciples of Tyler's framework, described by Komoski as:

> "information on mediated learning experiences ranging from textbooks and the proliferating array of other instructional materials (computer-based, video-based, and print-based), to the increasing numbers of integrated systems, some of which combine computer-aided instruction and management with print and other media;
>
> information about nonmaterials-based learning experiences and about the ways teachers can organise use of materials to go beyond their obvious uses. This function includes such teacher-generated strategies, student studies of nature, local government, their own behavior, as well as having students carry out useful projects with their school and local community ..."
>
> (Komoski, P.K., 1987, *Educational Technology: The Closing-in or the Opening-out of Curriculum and Instruction*, Syracuse: ERIC Clearinghouse on Information Resources, 28)

Komoski describes information in the Integrated Instructional Information Resource that relates to the fourth of Tyler's basic principles, as follows.

> "By using the Resource's curriculum descriptors to analyze and code test objectives and/or items into the Resource's database on tests, information about relevant norm-referenced and criterion-referenced tests may be accessed, correlated, and aligned with a school's curriculum goals, its materials, and its nonmaterials-based teacher strategies. It is also possible to create a link between the Resource and any of the many available banks of criterion-referenced test items."
>
> (Komoski, P.K., 1987, *Educational Technology: The Closing-in or the Opening-out of Curriculum and Instruction*, Syracuse: ERIC Clearinghouse on Information Resources, 29)

In explaining the relationship between the fifth basic principle and the Integrated Instructional Information Resource, Komoski states that:

> "A major purpose of the Resource is to enable schools to expedite the time-consuming, systematic analysis and correlation that are essential to curriculum planning, materials and test selection, and curriculum alignment. As a result, it makes it possible for a school's curriculum planners and teachers to devote more time to thinking through the systemic concerns involved in using the results of those analyses and correlations in applying the crucially important fifth principle of curriculum and instruction."
>
> (Komoski, P.K., 1987, *Educational Technology: The Closing-in or the Opening-out of Curriculum and Instruction*, Syracuse: ERIC Clearinghouse on Information Resources, 30)

Finally, two additional goals of the Integrated Instructional Information Resource are specified by Komoski (1987). Firstly, the Resource can be applied as a means of training teachers to select learning experiences for students using a combination of commercial materials together with teacher and student generated learning strategies. Secondly, research at the EPIE Institute is also focusing upon determining ways that parents can use the Resource to become informed on matters related to the curriculum so that they can support their children's learning at home.

3.1.1.2.2.5 Applications for Utilisation of Instructional Materials

To counteract what are now viewed to be both inadequate procedures and the widespread use of dubious practices for textbook adoptions in the United States, the Educational Products Information Exchange Institute (1986a) has developed and is promoting a utilisation policy which extends the process of adoption beyond selection of instructional materials to their use in the classroom. This utilisation policy is based upon three assumptions: firstly, that most textbooks are inadequate to promote positive classroom instruction; secondly, that most supplementary materials are flawed; and thirdly, that teachers require support, training, monitoring and communication with colleagues on matching instructional materials to the capabilities of individual students. The utilisation process includes adoption as an initial stage, which involves both selective and evaluative aspects. This is then followed by in-service training provided by publishers on the

technical aspects of an educational product and its management system. At the same time, the comprehensibility, the readability and the content appropriateness of the product should be considered independently from recommendations by publishers. In these ways, utilisation combines several techniques already mentioned within a single policy.

3.1.1.2.2.6 Research related to the Uses of Educational Products

Two significant studies conducted by the EPIE Institute have researched the use of educational products in classrooms of American schools (Educational Products Information Exchange Institute, 1977a; Komoski, 1985). The first study, named the National Survey and Assessment of Instructional Materials (NSAIM), was funded by the Lilly Endowment during 1974. In 1974 and 1975, the EPIE Institute gathered baseline data from a nationally stratified sample of more than 12,000 classroom teachers on the nature and quality of instructional materials. It was found that instructional materials are used between 90 per cent and 95 per cent of instructional time, which includes the use of textbooks for 70 per cent of instructional time. Research also investigated the degree to which learners' needs are matched to appropriate instructional materials. It was reported that only about half of the 12,000 teachers surveyed were involved in selecting the instructional materials they used.

In the second study conducted by the EPIE Institute for the National Institute of Education, it was found that instructional materials used in classrooms did not match learners' needs, contrary to the assertions of administrators and teachers. A one-group pretest-posttest design was administered in a number of schools in both affluent and economically depressed communities. The findings pointed to most students from all socio-economic backgrounds knowing a considerable proportion of the subject matter of instructional materials before their use and to few students making substantial gains in achievement tests administered after the use of the instructional materials.

3.1.1.2.2.7 Applications to Train Analysts of Educational Products

Since its foundation, the EPIE Institute has promoted an extensive and stringent program to train the analysts it employs to evaluate educational products. This is achieved through the use of training materials and a process, each of which is now described.

EPIE training Form I was the first material published (Educational Products Information Exchange Institute, 1977b). This instrument is designed for either class use or self-instruction. The instrument is a variant of EPIE analysis instrument, which was being used at that time to analyse educational products. EPIE training Form I comprises the following parts: I Product Identification and Background; II Instructional Design Constructs (A. The First Instructional Design Construct: Intents, B. The Second Instructional Design Construct: Contents, C. The Third Instructional Design Construct: Methodology, D. The Fourth Instructional Design Construct: Means of Evaluation); III Instructional Design Fit; and IV Other Considerations (Content Authenticity: Accuracy, Fairness, and Currency). EPIE training Form I specifies a set of common criteria on which trainees must base their descriptive, analytical and evaluative comments about a material. Instructions are supplied explaining each step in the analytic process, and examples of statements for each design construct are appended.

Recently, the Educational Products Information Exchange Institute (n.d.) has developed a module for use in providing educators with the knowledge and skills to evaluate all types of educational materials. Two ways for determining analysis of materials are presented in the module: firstly, application of four curriculum constructs - intents, contents,

methodology and evaluation - to provide qualitative analysis of materials; and secondly, correlating concepts, textbooks, supplementary instructional materials, computerised software programs, films, videotapes and tests to provide quantitative analysis of materials.

Qualitative analysis is presented through demonstration and discussion of six concepts: A Learning Materials Continuum; Ralph Tyler's Rationale; EPIE Institute's Curriculum Analysis Framework; A Bridge 'Analogy' of the Curriculum and Instruction Process; Internal and External Curriculum Congruence; and Development of an Integrated Instructional Information Resource. Quantitative analysis focuses upon matching concepts and educational materials in Curriculum/Content/Evaluation Correlation, and linking this process to the Integrated Instructional Information Resource and its application in the Curriculum Alignment Services for Educators.

The process that is employed in this training program can be conveyed by way of an illustration. The Educational Products Information Exchange Institute (1984) provides an account of the rigorous training program implemented for developing the Microcomputer Courseware PRO/FILES.

> "In 1982 as the flow of microcomputer products being marketed for school and home use began to increase, EPIE (working with Consumers Union and funded by the Ford and Carnegie Foundations) joined with the Urban Superintendents Technology Consortium to train and certify educators to evaluate microcomputer courseware. Some of the geographic areas involved in evaluation are: Albuquerque, Boston, Cincinnati, Detroit, Houston, Salt Lake City, Florida's Broward County, Alberta, San Francisco Bay Area, and the University of Southern Alabama...
>
> ...Centered at EPIE's Program Development and Research Office, Teachers College, Columbia University, the courseware evaluation process begins with extensive training and then certification of prospective analysts. These prospective analysts, all with relevant backgrounds in computers, education, and specific content areas, are trained to use EPIE's evaluation instrument and to practice its application on a number of courseware programs. Once trained, prospective analysts may apply for 'certification'; each must complete an analysis of a designated piece of courseware which is then compared to a 'model' analysis by a three-person evaluator certification committee. Applicants not meeting a high standard of expertise are refused certification. This process ensures that EPIE uses only highly skilled and motivated analysts, which in turn then helps ensure that our Courseware PRO/FILES are of the highest quality.
>
> Once analysts have been certified, their progress is closely monitored; each is paired with an experienced analyst and receives both formal and informal training. High inter-rater reliability attests to the efficacy of this approach to training analysts."
>
> (Educational Products Information Exchange Institute, 1984, *The Educational Software Selector*, 547-548).

3.1.1.2.2.8 Applications to Teacher Education

The EPIE Institute has been active in teacher education since 1973-1974, when a program to train teachers in analysing instructional materials was introduced in Pennsylvania and California, and was later extended to other states and Canada.

The EPIE Institute has developed two sets of modules for training teachers to select and effectively use curriculum materials. The first set to be developed, the Packaged Training Workshop in Instructional Materials Selection, consists of thirty modules developed between 1978 and 1979. The second set comprises ten modules developed during the conduct of the Teacher Information Exchange (TIE) project between 1980 and 1982.

Funded by the National Institute of Education, the development, field-testing and revision of the Packaged Training Workshop in Instructional Materials Selection, are reported by the Educational Products Information Exchange Institute (1980b). The

thirty modules consist of three main groups: sixteen modules, the basic components of the set, developed, field-tested and revised during 1978-1979; four modules adapted from the first group for use with special educators, developed and later field-tested by the Wayne County Public Schools, Michigan during 1979; and ten modules developed during 1979 following empirical research conducted by the EPIE Institute to gather and to analyse data that indicated widespread and gross misfitting of curriculum materials to the capabilities of students. A project to disseminate the modules and train teachers was initially conducted in Illinois during 1979 and later, in 1980, extended to other states.

In 1980, the Teacher Information Exchange (TIE) project, reported by the Educational Products Information Exchange Institute (1986b), was implemented for two years in a dozen elementary and junior high schools in New York City. The EPIE Institute's staff worked with teachers through classroom observations, consultations, workshops and meetings to identify issues related to the use of curriculum materials in classrooms. The same teachers were provided with in-service training about how to use curriculum materials more effectively once they had been selected. An important feature of this project was to train these teachers sufficiently so that they could share their training with other teachers. To facilitate teacher education, ten modules were developed by the EPIE Institute and field-tested in the participating schools. These modules addressed the following issues: 1. an overview of the concept of time-on-task; 2. and 3. educational objectives; 4. and 5. a management system involving tests and record-keeping devices; 6. and 7. supplementary materials, their adaptation, and planning of worksheets; 8. classroom structure as related to using curriculum materials and learners' time-on-task; 9. pacing lessons; and 10. instituting routine in using instructional materials.

Finally, the Educational Products Information Exchange Institute (1986c) has developed a set of modules to facilitate the training of teachers in relation to the implementation of the Degrees of Reading Power in school districts. The modules are intended to be used at either EPIE training workshops or school-based workshops.

3.1.2. The Social Science Education Consortium (SSEC)

The Social Science Education Consortium (SSEC) was established during 1963-1964 at the University of Colorado, Boulder, Colorado. Its aims are to collect and disseminate materials for social studies education, to support development and implementation of new social studies materials and to improve working relationships between personnel in various social studies education projects.

3.1.2.1 The Procedure for Selecting Curriculum Materials

Davis and Eckenrod (1972) provide an account of the procedure recommended by the Social Science Education Consortium for selecting curriculum materials for social studies. Two major steps are involved in this process: firstly, a statement of broad program goals, such as the guidelines developed by the National Council for the Social Studies, can be used to identify available curriculum materials; and secondly, evaluation of curriculum materials that appear to support the program goals by use of the Social Science Education Consortium's *Curriculum Materials Analysis System*.

3.1.2.2 The Curriculum Materials Analysis System

Morrissett et al. (1968) reported the development of an instrument to evaluate curriculum materials. The instrument originated informally as a brief form containing a dozen or so questions. This form was revised and enlarged on several occasions but was

first formally applied as part of activities undertaken with the Wabash Valley Education Center, Indiana, early in 1966. The original version of this instrument, published by Morrissett and Stevens (1967), comprised the following sections: 1.0 Descriptive Characteristics; 2.0 Rationale and Objectives; 3.0 Antecedent Conditions; 4.0 Content; 5.0 Instructional Theory and Teaching Strategies; and 6.0 Overall Judgements. No sooner had this original version of the *Curriculum Materials Analysis System* been published than an initial, revised version was published (Stevens and Morrissett, 1967-1968; and Stevens and Fetsko, 1968). This version was the result of reworkings conducted at a conference sponsored by the EPIE Institute at Lake Mohonk, New York in 1966 and at Purdue University in April 1967. Further reworkings of the instrument also occurred as a result of a conference held at the University of Colorado in May 1968, and as a result of criticisms and suggestions for revision contributed by Charles Adair, Frances Klein, Michael Scriven, Hilda Taba and Louise Tyler. In May 1971, a second revised version of the instrument (Social Science Education Consortium, 1971) was published, containing short, intermediate and long forms and including two additional sections. This version is arranged as follows: 1.0 Product Characteristics; 2.0 Rationale and Objectives; 3.0 Content; 4.0 Theory and Strategies; 5.0 Antecedent Conditions; 6.0 Evaluation; 7.0 Background of Materials Development; and 8.0 Background of the Analysis. Singleton (1987) reported that the *Curriculum Materials Analysis System* has not been adapted to a computer-based program.

Analyses of social studies curriculum materials undertaken by the Social Science Education Consortium, using a two-page framework derived from the *Curriculum Materials Analysis System*, are published in successive editions of the *Social Studies Curriculum Materials Data Book*.

3.1.2.3 Uses of the Instrument

The authors cite eight possible uses of this instrument (Morrissett et al.): general library use; analysis of trends within curriculum materials; field data collection about classroom use of curriculum materials; decision-making in the selection of new curriculum materials; provision of analyses of curriculum materials in terms of a curriculum model; promotion of all dimensions of curriculum development; introduction of new ideas and approaches in curriculum materials through in-service education; and acquainting preservice teacher trainees with the range of curriculum materials and the ability to perform their own analyses. Application of the *Curriculum Materials Analysis System* to several of these uses has been reported by Morrissett et al. and Davis and Eckenrod.

3.1.3 The Council on Interracial Books for Children (CIBC)

The Council on Interracial Books for Children (CIBC) was founded in 1966 by writers, editors, illustrators, teachers and parents to promote literature for children that better reflects multiracial and multicultural values. The CIBC is located at New York City.

The program of the CIBC consists of three main activities. Conferences and workshops organised by resource specialists and scholars representing Blacks, Puerto Ricans, Chicanos, Asian Americans, Native Americans and women, focus parents, publishers and educational professionals on biases found in textbooks and on developing criteria for analysing instructional materials. A Third World Writers Contest promotes the anti-racist and anti-sexist works of previously unpublished writers. The *Interracial Books for Children Bulletin* provides evaluations of racist and sexist biases in instructional materials. In 1975, the Carnegie Corporation provided a grant to the CIBC to establish

a Racism and Sexism Resource Center for Educators. Its staff develops anti-racist and anti-sexist curriculum materials, lesson plans and teaching strategies, provides consultants and conducts teacher training programs.

The Council on Interracial Books for Children (1977) published a content analysis instrument for assessing the portrayals of women and ethnic groups - African Americans, Asian Americans, Chicanos, Native Americans and Puerto Ricans - in U.S. history textbooks. In excerpts describing each of these groups, a list of facts is provided that reflects contents thought to be absent in biased textbooks. The evaluator examines a textbook of interest to determine whether each fact is present. Using a simple numerical procedure, based upon the quantity and the quality of coverage, the evaluator completes a rating scale with the following categories: whether the text provided incorrect information; whether the text provided no information; whether the text failed to deal with the historical period from which the fact was derived; whether the text provided limited information; or whether the text provided full information. A text is scored by computing numerical values. Texts with the highest scores are considered to provide a more balanced treatment of targeted groups.

Garcia and Armstrong (1979) have identified two limitations of the procedure employed by the CIBC in that publication. Firstly, the lack of clear decision rules for evaluators to distinguish between the categories may lead to low inter-rater reliability. Secondly, because the underlying historical perspective only accepts a simple interpretation, a 'colonial model', in which whites always oppress blacks and men always oppress women, this perspective, they believe, is as slanted as the one it is proposed to redress.

Late in 1979, the United States Office of Education invited the Council on Interracial Books for Children to present a set of bias-free guidelines to program officers at the United States Department of Health, Education and Welfare. These guidelines were later published (Council on Interracial Books for Children, 1979). In this publication, the Council on Interracial Books for Children compiled guidelines originally presented in its earlier publications as well as from other sources. Within this publication, the attributes of racist and sexist biases in both storybooks and textbooks are described, guidelines are presented for specific minority groups, and checklists of criteria that relate to each group are appended. The Council on Interracial Books for Children (1980) excerpted ten guidelines to identify racist and sexist biases in instructional materials: to check illustrations; to check story lines; to examine lifestyles; to weigh the relationships between people; to identify the heroes; to consider the author's and the illustrator's backgrounds; to check out the author's perspective; to watch for loaded words; and to look at the copyright date.

3.1.4 Women on Words and Images (WOWI)

Founded in 1970 by Joan Bartl, Rogie Bender, Pryde Brown, Cynthia Eaton, Carol Jacobs and Ann Stefan, the Women on Words and Images (WOWI) at Princeton, New Jersey is a group of researchers and consultants on sexism in education.

Women on Words and Images (1972) published the results of two years' research into sexism in 2760 stories in 134 readers from 14 American publishers. The results indicated that sexism is both evident statistically and through content analysis in the representations, depictions and occupations of males and females in the sample of readers analysed. A slide show was then developed to present these findings at workshops.

As a result of its contribution to the EPIE Institute's analysis of instructional materials for career education, another publication by Women on Words and Images (n.d.a) analysed sex-role stereotyping in 100 nationally distributed career education materials. A slide show, based on this publication, was also produced. Women on Words and Images (n.d.b) has also produced a slide show on the results of a content analysis of sex-role stereotyping in 25 foreign language textbooks by 16 publishers.

Women on Words and Images (1979) published a checklist for evaluating sexism in instructional materials. Evaluators should answer four questions when using this checklist: whether equivalent titles of address are used in the material for both men and women; whether irrelevant information about a woman's family is included when describing her role at work; whether achievements of both males and females are cited; and whether a woman is described in terms of physical appearance whilst men are described in terms of accomplishments or character.

3.2 A Survey of Other Educational Organisations

In order to survey comprehensively the actions of other American educational organisations through their publications , the author conducted a review of research through a systematic search of the annotated index of the Resources in Education (RIE) database compiled by the Educational Resources Information Center (ERIC) Washington, D.C. The conduct of this search has been previously reported (Watt, 1987). The purpose of the search was twofold: firstly, to identify documents on selecting and evaluating educational products published by national educational organisations; and secondly, to identify guidelines for selecting and evaluating educational products published by state education departments and school districts.

3.2.1 Method

The search of the annotated index in the *Resources in Education* database, was conducted manually and included the period between the establishment of the database in November 1966 and December 1985. This search was conducted through the Subject Index using the following descriptors: bilingual education; instructional materials; multicultural education; multicultural textbooks; reading material selection; textbook bias; textbook evaluation; and textbook selection.

Because the original purpose of the search had been to identify documents that relate to generically-based research and to research related to bilingual-bicultural, multicultural education and related areas, research that was based in other subject areas was excluded. Initially, identification was made on the basis of the relevance of each document's title, and then, in each case, recourse was taken to examining relevant abstracts indexed in the Main Entry section. It was possible to accept or reject each document on the basis of the description provided in the abstract satisfying a specific criterion. This criterion specified that the document included subject matter that related substantially to the selection and the evaluation of curriculum materials, including evaluation of bias.

3.2.2 The Results

Annotations of research on selecting and evaluating educational products that have been entered in the *Resources in Education* database, represent an infinitesimal proportion of its total entries. The 158 documents identified, represent 0.06% of a total of 250,173

documents (ED 010 000 through ED 260 172) indexed in the *Resources in Education* database during this period. Among the 158 documents, 70 related to research about general developments in selecting and evaluating curriculum materials, and 88 related to research about selecting and evaluating curriculum materials for bilingual-bicultural education, multicultural education and related areas. One hundred and forty-seven (93.0%) of the contributions in this field to the *Resources in Education* database, originated from sources in the United States of America.

3.2.3 Discussion

3.2.3.1 Universities

Of the 147 documents, twenty documents (13.6%) originated from universities. Of the sixteen universities contributing research, three documents originated from the City University of New York (Cohen and Koehler, 1975; Eash 1969; and Eash 1970) and two documents each originated from The Ohio State University (1976; and 1977) and the Michigan State University (Levine 1969; and Ward, 1969). Single documents were contributed by authors of other universities: Hernandez and Melnick (n.d.) at Hartford University; the George Washington University (1968); Singh and Barnard (1969) at the University of South Florida; Mehlinger and Patrick (1970) at Indiana University; McGuigan (1971) at the North Carolina State University; Wilcox (1971) at the University of Southern California; Douma (1973) at the University of Michigan; McKeon (1975) at The State University of New Jersey; Williams et al. (1976) at the San Diego State University; Rabin (1978) at the University of Pennyslvania; Harrison (1979) at the University of Arizona, Keith (1981) at Stanford University; and Ventura (1983) at the University of Kansas.

Seven universities were represented in eight contributions (5.4%) to joint research. Two contributions to joint research were made by the Northern Illinois University (Simpson and Loveall, 1976; and Charuhas, 1984). Authors from the remaining universities contributed single documents: the Educational Products Information Exchange Institute et al. (1969) for the New York State University; Armstrong (1973) for Wisconsin University; Magisos (1973) for The Ohio State University; the Alabama University and Mobile County Public Schools (1976); Tierney et al. (1980) for the Illinois University; and McGrew (1983) for the University of Northern Iowa.

Both academic research and higher degree theses were represented in documents contributed by tertiary institutions.

3.2.3.2 Educational Research Organisations

Twenty documents (13.6%) originated from educational research organisations. Of this contribution, four documents originated from the Educational Products Information Exchange Institute (1975, 1976a, 1976b, 1976c), four documents originated from the Educational Testing Service (Epstein et al, 1971; Walton, 1973; Walton et al, 1973; and Eash et al, 1975), and four documents originated from the Social Science Education Consortium (Knight and Hodges, 1970; Knight et al., 1971a; Knight et al., 1971b; and Haley, 1982). Three documents were contributed by regional educational laboratories, of which the Far West Laboratory for Educational Research and Development contributed two (Banathy et al., 1976; and Far West Laboratory for Educational Research and Development, 1980) and the Central Midwestern Regional Educational Laboratory contributed one (Tom, 1977). The five remaining documents originated from

the Institute of Educational Development (1969), the Educational Research Service (Kunder, 1976), the School Information and Research Service (Orlich, 1979), the South Carolina Vocational Education Research Co-ordinating Unit (Reynolds, 1981), and the Education Development Center (Cotera, 1982).
In addition, the Educational Products Information Exchange Institute (1969; and 1974) collaborated with other organisations to develop two other documents (1.4%).

3.2.3.3 Professional Associations

Professional associations were responsible for two types of documents: firstly, documents published by those associations; and secondly, conference papers sponsored by those associations. Both national and state professional associations are considered in this discussion.
Ten professional associations were responsible for contributing fourteen documents (6.8%) to the *Resources in Education* database. Of this contribution, four documents originated from the National Council of Teachers of English (Perkins, 1967; National Council of Teachers of English, 1970; Perkins, 1972a; and Perkins, 1972b) and two documents originated from the National Education Association (1973; and 1978). Single documents were contributed on behalf of professional associations by different authors: Dusel (1970) for the Foreign Language Association of Greater Sacramento; Deya (1975) for the Southern Conference on Language Teaching; Williams (1975) for the Michigan Education Association; Cohen (1976) for the Association for Childhood Education International; Witter (1977) for the Oregon Association for Supervision and Curriculum Development; Klein (1978) for the Association for Supervision and Curriculum Development; Johnson (1979) for the American Council on the Teaching of Foreign Languages; and Haas (1985) for the National Council for the Social Studies.
Furthermore, six professional associations collaborated to publish the remaining five documents (3.4%). These collaborations were undertaken by the Joint Committee of the National Education Association and Association of American Publishers (1972), Kamhi (1982a; 1982b; and 1982c) who produced three documents in a collaborative effort for the American Library Association, the Association for Supervision and Curriculum Development and the Association of American Publishers, and the National Committee for Citizens in Education collaborated with the EPIE Institute (Educational Products Information Exchange Institute et al., 1969).
Papers presented at conferences of professional associations constituted twenty documents (13.6%) entered in the *Resources in Education* database.
Twelve professional associations were represented among this group, with five papers being contributed by speakers at conferences of the American Educational Research Association (Eisner, 1970; Banks, 1974; Talmage and Walberg, 1977; Hahn, 1978; and Welch, 1978), with three papers being contributed by speakers at conferences of the National Council of Teachers of English (Washburn, 1978; Zenke, 1981; and Sword, 1982), and with two papers each being contributed by speakers at conferences of the Association for Supervision and Curriculum Development (Garcia and Armstrong, 1978; and Komoski, 1980) and the International Reading Association (Olsen, 1968; and Whipple, 1968). Each of the remaining professional associations were represented by papers presented by a single speaker: the TESOL Conference (Nadler, 1969); the National Council for the Social Studies (Fox, 1972); the National Reading Conference (Greenlaw et al., 1973); the Southern Conference on Language Teaching (Chapman, 1975); the Illinois Association of School Librarians (Schmidt, 1975); the National Forum

on Excellence in Education (Brunelle et al., 1983); The Council for Exceptional Children (De Leon, 1983); and the American Council on the Teaching of Foreign Languages (Benevento, 1984).

3.2.3.4 Federal Education Agencies and Commissions

Four documents (2.7%) were contributed to the *Resources in Education* database by federal education agencies and commissions. These documents were authored by Carter (1971) for the Bureau of Elementary and Secondary Education, Moses and Watt (1976) for the Office of Education, Schmidt (1981) in a collaborative effort including the Office of the State Superintendent of Public Instruction, and Antell (1981) for the Education Commission of the States.

3.2.3.5 Service Centres

Authors associated with education service centres contributed eight documents (5.4%) to the *Resources in Education* database. These authors were Swisher (1968) and Naegle (1970) for the Mid-Atlantic Region Special Education Instructional Materials Center, Magisos (1973) for a collaborative effort including the New England Resource Center, Blackburn (1974) for the Social Studies Service Center, the Dissemination and Assessment Center for Bilingual Education (1977), the Eastern Pennsylvania Regional Resources Center for Special Education (1977), Schmidt (1981) for a collaborative effort including the Division of Instructional and Professional Services, and Charuhas (1984) for a joint effort including the Region I Adult Education Service Center.

3.2.3.6 State Education Departments and School Districts

3.2.3.6.1 Adoption Procedures

The potential for improving the selections of curriculum materials for American schools is very likely to occur from the comprehensive use of textbook adoption procedures. Textbook adoption procedures have been enacted by all states of the United States. Three distinguishable types of procedure have been adopted for textbook selection, varying from a centralised model based upon a state selection committee to a decentralised model within local school districts (Blaunstein, 1983; Duke, 1985; Muther, 1986).

In the centralised model, used by twenty states, state selection committees, varying from six to thirty members each, use criteria developed at the state level to select textbooks for their respective states. The states, applying a centralised model, are Alabama, Arkansas, California, Florida, Georgia, Idaho, Indiana, Kentucky, Louisiana, Mississippi, New Mexico, North Carolina, Oklahoma, Oregon, South Carolina, Tennessee, Texas, Utah, Virginia and West Virginia. In the second model, two states - Arizona and Nevada - adopt textbooks for grades K to 8 at the state level, whilst school districts select textbooks for grades 9 to 12.

In the decentralised model, school districts in twenty-eight states develop their own criteria, which are then used by local selection committees to screen instructional materials. The states, applying a decentralised model, are Alaska, Colorado, Connecticutt, Delaware, Hawaii, Illinois, Iowa, Kansas, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, New Hampshire, New Jersey, New York, North Dakota, Ohio, Pennsylvania, Rhode Island, South Dakota, Vermont, Washington, Wisconsin and Wyoming.

The extent to which those states that practise some form of the centralised model of adoption have formalised its procedures, are of greatest significance for influencing the practices of selecting textbooks. After completing an extensive, comparative survey of state selection committees in each of the twenty-two states practising the centralised model, Duke found considerable variety in their application of procedures for selecting curriculum materials.

Reflecting cross-sections of both educational and lay communities, state selection committees recommended textbooks to state boards of education for listing, in all but two states. The duration of the adoption process varies from three months to more than a year among these states. Curriculum materials proposed for adoption are usually made publicly accessible through materials display centres throughout this period. The procedures for adoption also vary widely with some states applying objective criteria to evaluate curriculum materials whilst others make subjective decisions only. Selection committees also compile annotations of materials adopted although only nine of these states extend annotations beyond basic purchasing information.

In spite of the extensive application of these procedures, Duke found from a survey of textbook administrators in each of the twenty-two states that there are both weaknesses and strengths of the centralised textbook adoption procedures in their respective states. The controlling of prices of materials over a set time, the assurance of service by publishers, and centralised bidding and purchase were the most frequently mentioned strengths, whilst the lack of communication among evaluators, the absense of appropriate training of evaluators, the short duration for evaluating materials, the long duration of the adoption process, the excessive or limited number of materials accepted and the inadequate funding of textbook purchases were the most frequently mentioned weaknesses.

Furthermore, Duke concluded from the data gained in his survey that there were seven areas for concern in current adoption procedures.

> "1. The criteria used for evaluation vary widely and appear not always to relate clearly enough to current instructional practices to be of much value; forms and procedures for recording evaluations are not always clear.
>
> 2. Appropriate training for evaluators in using specific criteria is clearly lacking.
>
> 3. The apparent duplication of effort at both state and local levels in evaluating instructional materials raises questions about the efficiency and effectiveness of the process.
>
> 4. Reviews at the state level appear not to have much uniformity and textbook commission members themselves frequently do not do the actual reviewing but pass that task on to friends, colleagues and others; yet these same commission members make the final recommendations for adoption.
>
> 5. The translation of evaluators' reviews of text materials into final votes for adoption remains unclear in most states.
>
> 6. Time is a clear factor in the adoption process yet no evidence is available to indicate what the optimum time might be for the reviewing process or for the length of the adoption cycle.
>
> 7. Economic factors seem to be a major influence in states keeping state-wide adoption practices."
>
> (Duke, C.R. 1985 *A Look at Current State-wide Text Adoption Procedures*, Paper presented at the annual meeting of the National Council of Teachers of English, Spring Conference, Houston,14-15)

Even before Duke had provided this evidence of the failures of textbook adoption procedures, education officials from twenty-two states acted upon their insights into these likely failures to form a 'cartel for excellence' in order to improve adoption procedures (Education Week, 1984). Calls were made for textbook publishers to raise their standards, for teachers to be involved to a greater extent in textbook selection processes,

for teachers to receive training to become effective selection committee members, for clearer specification of selection criteria, and for teachers to receive training on how to use textbooks in the classroom.

Muther (1986) has supported these findings and views, but has related their effects more closely to practices in states applying the decentralised model. She indicates that states operating decentralised forms of textbook adoption procedures are frequently influenced by publishers to purchase textbooks through 'best deals' in order to reduce costs. Such a practice occurs because few selection committees are required to provide evidence that a particular curriculum material is the best for a particular school's educational program.

In conclusion, the procedures for textbook adoptions, conducted by American educational authorities, through either a centralised model or a decentralised model, have both weaknesses and strengths. The strengths, and in particular, the weaknesses of these procedures are now becoming evident to researchers and educators endeavouring to affect desirable changes in the selection of curriculum materials. Whereas reform of textbook adoption procedures is beginning to receive attention, it is also recognised that American teachers need to be more directly involved in selecting the textbooks they use in their classrooms. For instance, the development of a textbook utilisation policy, such as the one being promoted by the EPIE Institute, will extend selection from the initiatory stage of adoption to an integral process, involving the use of curriculum materials in the transactions of classrooms.

3.2.3.6.2 Publications and Guidelines

3.2.3.6.2.1 State Education Departments and State Boards of Education

As a result of the search, eighteen sets of guidelines (12.2%) published by state education departments and state boards of education, were identified. These guidelines were published by the Pennyslvania State Department of Public Instruction (McGarey, 1964; and 1967), the Iowa State Department of Public Instruction (1969), the New Mexico State Department of Education (1973), the Arizona State Department of Education (1974a; 1974b), the Indiana State Department of Public Instruction (1974), the Florida State Department of Education (1975), the Georgia State Department of Education (1975), the Illinois State Office of Education (1975), the Massachusetts State Department of Education (1975), the Indiana State Department of Public Instruction (1977), the California State Department of Education (1981), the Illinois State Board of Education (1981), the Maryland State Department of Education (1981), the California State Department of Education (1982), the Ohio State Department of Education (1983), and the California State Department of Education (1984). Since only twelve states are represented, these documents are the products of an even more restricted group of state education departments.

An analysis indicates that nine of these documents relate to specifying guidelines of a generic type for selecting and evaluating educational products. Most of the documents are directed towards school personnel. The remaining eight documents relate to specifying guidelines for selecting and evaluating educational products for special groups. Two documents relate to specific guidelines for selecting and evaluating social studies materials. The remaining six documents are directed to teachers of minority groups for the purpose of identifying biases in the following areas: male and female roles; ethnic and cultural groups; and disabled persons.

3.2.3.6.2.2 School Districts

As a result of this search, only two sets of guidelines (1.4%) published by school districts were identified. These guidelines were authored by Newman (1977) and Darling (1983). Additionally, the Alabama University and Mobile County Public Schools (1976) collaborated to publish a set of guidelines.

3.3 Conclusion

This descriptive survey shows that the techniques employed in American education for adopting, for evaluating, for selecting, and for utilising educational products have contributed substantially towards affecting one of the fundamental variables - the uses of instructional materials - involved in classroom transactions.

The precipitating cause that led to the development of these techniques was the rapid expansion in production of educational products - textbooks, supplementary print materials, audio-visual materials and educational equipment - that occurred during the curriculum reform movement of the 1960's. Klein (1978) states that this expansion was caused by four factors: the reassessment of the goals and the achievements of public schooling; the dissatisfaction shown by tertiary educators with the educational achievements of incoming students; the expansion of knowledge in many disciplines; and the growth of civil rights movements among many minority groups. The outcome of this movement was the production of a vast quantity of instructional materials for redefined and new areas of the curriculum. The expansion in the quantity of instructional materials, together with the decentralisation of American schooling and the trend towards accountability in education, focused attention upon the need for improving the quality of this large quantity of materials.

At the same time, this need was met by the expansion of educational agencies that occurred in the United States during the 1960's. Under the Research and Development Centers Program (1963), the United States Office of Education (USOE) established four research and development centres during 1964, which were increased to ten centres within a few years. The intent of the research and development centres was to identify high-priority, educational problems which could either be researched or be treated by the synthesis of information available from already completed research. Through guidelines provided to the USOE by amendments to the Co-operative Research Act in 1965, companion regional educational laboratories were founded in 1966 with the functions of field-testing and modifying educational procedures and materials developed by research and development centres, and then disseminating the resulting innovations. It was within this climate that the initial attempts were made to grapple with the problems inherent in improving the quality of educational products by relating this issue to the curriculum and instructional design. The issue was solved, firstly, by two research efforts: that one conducted at the Social Science Education Consortium during the late 1960's to develop an instrument for instructional design analysis, the *Curriculum Materials Analysis System*; and that one conducted by Eash to develop an instrument for instructional design analysis at the University of Illinois at Chicago Circle. Secondly, the issues of research and development, field-testing, modifying and diffusing procedures on evaluating materials and other problems related to educational products, has been accomplished by the establishment and the operation of the EPIE Institute.

The descriptions of programs surveyed in this chapter have shown that the EPIE Institute has extended instructional design analysis to establish both internal and external congruences of materials and instructional programs. Furthermore, the EPIE Institute

has developed several, inventive techniques to improve the quality of educational products as well as to relate the use of instructional materials by teachers in classrooms to the curriculum. In citing one of a number of other sources that have commented upon the exemplary practices employed by the EPIE Institute, Scriven (1981: 126) believed that the services of the EPIE Institute could be made to yield a thousand-fold upon a modest investment, given greater support by state and federal education agencies. This has been taken up by the National Commission on Excellence in Education (1983: 28-29), which supported the extension of consumer information services of the kind operated by the EPIE Institute for purchasers of instructional materials.

Whereas issues associated with the evaluation of educational products have been mainly solved through the actions of nationally-based agencies, of which the EPIE Institute is the most significant, issues related to the adoption and the selection of educational products have been addressed mainly by state education departments and school districts. The description of adoption procedures has shown that undesirable practices occur, although these are currently being challenged.

Furthermore, publishers have been made more accountable for affecting the improvement of their products through learner-based verification and revision. The need for this improvement through learner-based verification and revision has been addressed at a national level, rather than a state or local level.

This account of the application of techniques to improve the quality and uses of educational products in American education does not portray an ideal picture. It does provide, however, the potential to be a significant solution to a major issue confronting those responsible for the uses of instructional materials in schools. An important, if insubstantial, investment in research since the 1960's is now providing a solution which relates the uses of instructional materials directly to curriculum development, curriculum implementation and curriculum evaluation. The proponents of this solution have also effectively bridged the gap between research and practice through the actions of educational organisations, such as the EPIE Institute, which combine the function of research and development with the provision of services to education departments, school districts and other users.

CHAPTER 4

THE PROSPECTIVE PROGRAM

The purpose of this chapter is to identify a set of objectives and other characteristics upon which the prospective program can be specified. These specifications refer to the design of a program that applies reliable and valid techniques to collect, to analyse and to disseminate qualitative data on instructional materials to the Australian educational community on a national basis.

The context evaluation has identified deficiencies in the methods, the techniques and the practices applied in the Australian context, both through an examination of the Australian context presented in Chapter 2 and through comparison with the American context presented in Chapter 3. Recognition of these discrepancies intimates that a prospective program would benefit from contributions bestowed by foreign educational organisations. A subsidiary aim of the prospective program, therefore, is to include scope for possible cooperation with three foreign educational organisations: the Educational Products Information Exchange (EPIE) Institute; the Social Science Education Consortium (SSEC); and the Canadian Exchange for Instructional Materials Analysis (CEIMA). The extent of this cooperation will be investigated within the input evaluation.

4.1 The Research Problem

Baseline data of two types were collected to determine deficiencies: data from documents and a multi-site case study collected at a micro-level in Tasmania; and data from state education departments collected at a macro-level in other Australian states. Deficiencies in the reliability and validity of techniques to evaluate educational products have been determined through judgments based upon this empirical evidence.

These deficiencies appear to be a consequence, in part, of shortcomings in the existing program. The empirical evidence presented on the existing program for analysing educational products in the Australian context shows extensive, but essentially uncoordinated, activities occurring at the state level in which techniques of low reliability and low validity are generally applied. These activities are not usually supported at the national level, with the exception of the current development and implementation of the National Software Coordination Unit (NSCU).

The research problem is to explicate the objectives and other characteristics of a prospective program to be implemented at the national level. Specification of these characteristics was facilitated by adapting six categories of criteria expounded by Stufflebeam et al. (1971a): significance of focus; significance of outcomes; uniqueness; viability; adequacy of program elements; and cost.

4.2 The Method

Stufflebeam et al. (1971a), as Advocate Team No. 1, submitted a report to the Division of Research and Development Resources, United States Office of Education, which proposed an evaluation system for research and development institutions and programs. This report includes an organisational framework within which the evaluation system could function, procedures to be followed in implementing the evaluation system, and a set of criteria and related guidelines for use in applying the proposed evaluative approach. A set of criteria was selected and was applied according to the specification established by Advocate Team No. 1. Selection of criteria was determined by defining the type of classification to which the evaluation fits: prospective institution; prospective program; retrospective institution; or retrospective program. It was determined that criteria pertaining to the prospective program should be selected. These criteria were then matched to guidelines specified by Stufflebeam et al. (1971a) for the decision type, Program-Plan Approval, one of three types of prospective programs. The guidelines were rearranged to conform with the set of criteria extracted, and, in cases where guidelines were not specified, the researcher wrote his own guidelines. The guidelines for specification of the prospective program are reproduced as Appendix D.

4.3 The Specifications of the Prospective Program

The problem is to describe the objectives and other characteristics of the prospective program for collecting, analysing and disseminating qualitative data on instructional materials (other than computer courseware) to the Australian educational community at a national level. These characteristics are described under guidelines specified by Stufflebeam et al. (1971a), as follows.

Significance of focus

- **Priority**

Guideline 1

On 22 September 1987, the Minister for Employment, Education and Training presented a statement importuning that educational outcomes must be congruent with the requirements of a restructured economy (Dawkins, 1987). A significant role is to be given to the higher education system in promoting the federal government's economic and social objectives. This statement was followed by a policy discussion paper (Australia, Parliament, 1987) intended to elicit responses before new legislation came into effect during 1988. This legislation led to a major restructure of national educational organisations: firstly, the merging of the Commonwealth Schools Commission with the Department of Employment, Education and Training, which includes the Curriculum Development Centre as a division; and secondly, the formation of a National Board of Employment, Education and Training, to which four advisory councils - the Schools

Council, the Higher Education Council, the Employment and Skills Formation Council, and the Australian Research Council - report.

The purpose of establishing this priority for the higher education system is to maximise the flexibility of the educational system to respond to national needs, to produce quality graduates using available resources, and to remove barriers that impede both change and the introduction of innovative approaches. These reforms to the higher education system are also having significant implications for determining the priorities of primary and secondary education. With a major aim to extend retention rates substantially to the end of grade 12, three main implications for primary and secondary education are identified in the policy discussion paper: changes to the curriculum, particularly in science and mathematics; changes to teacher education and retraining; and changes to funding and infrastructure provisions. An emphasis is also placed upon extending opportunities to groups identified as disadvantaged: those economically disadvantaged; people from rural and isolated areas; and aboriginal Australians.

On 23 May 1988, the Minister for Employment, Education and Training presented a statement inviting cooperation from the states toward a national effort to strengthen the capacity of Australian schools (Dawkins, 1988). The statement presented a rationale for developing a common curriculum framework for Australian schools. The framework is to specify common objectives which can accommodate specific content for regional needs, whilst recognising Australia's role in the Asian and Pacific region. A priority is to be given to establishing mathematics and science courses that reflect the technological needs of Australian society. This curriculum framework is to be supported by a common approach to student assessment and reporting. Improving preservice and inservice teacher education, increasing the student retention rates in schools, providing for special educational needs of disadvantaged groups, and maximising the investment in education were recommended in the statement. The statement projected that a process of consultation with the states and school systems would be initiated within two months.

It can be inferred that the prospective program will be congruent with the educational priorities of the government. The intent in the prospective program to design a system for the exchange of information on instructional materials will be consistent with the educational priorities of the government to enhance higher education and to develop national curriculum guidelines for Australian schools. The exchange will serve the needs of state education departments, which will be expected to share curriculum resources to a far greater extent than previously.

Guideline 2

Before its dissolution, the Commonwealth Schools Commission (1987) stated in a recent report on education that it is crucial five fields of action are addressed through a coordinated national effort: the balance, rigour, relevance and cohesion of curriculum development; the equity, national compatibility and inclusiveness of accreditation, assessment and credentialling; school organisation and climate; integrated on-the-job approaches to teacher development; and reciprocal obligations of links with the wider community. Guidelines to achieve each of these fields of action are stated for the national, state and school levels.

A key task stated for the national education system is to collaborate with state and territorial education departments on the development of curriculum and the exchange of information, course design and materials evaluation (Commonwealth Schools Commission, 1987: 131).

Guideline 3

The prospective program is predicted to have both social and economic consequences. Social consequences are likely to result from gaining a better match between instructional materials and student needs. It can be expected that social adjustment of learners toward equal opportunities and multiculturalism will be ameliorated by the identification of biases in instructional materials.

Economic consequences are likely to occur through reducing wasted expenditure on educational products, and through providing a degree of consumer protection by means of actions on complaints about faulty materials, inadequate service, and unethical sales strategies.

Guideline 4

All categories of the student population, all demographic areas and all economic settings in the Australian educational community will have the potential to be served by the prospective program.

Guideline 5

It can be expected that the work of the prospective program will continue to be significant, even if priorities shift in the future. The program is expected to satisfy a continuing need for the provision of qualitative information on educational products. This prediction is based upon the continuation of similar programs in foreign contexts of the educational setting.

Amenability to a research and development approach

Guideline 6

A substantial proportion of knowledge and skills pertaining to techniques to provide qualitative data on educational products has been gained through research and development activities. It can be expected that further advances in knowledge and skills are likely to occur through research and development activities. Because research and development activities in foreign contexts have been responsible for gains in such knowledge and skills, a significant and immediate requirement will be the adaptation of such activities to suit Australian requirements and conditions.

Significance of outcomes

Guideline 7

The significance of the prospective outcomes lies in the capacity of information on instructional materials derived from new and innovative techniques being delivered to a substantial proportion of Australian schools.

Guideline 8

The prospective outcomes are likely to be both timely and critical. The prospective program will introduce innovative methods and techniques to provide information on instructional materials at a time when the Australian education system is gaining the capability to develop information databases and services on a national scale. Because of the emphasis toward coordinated national effort, attention is being given, at the same time, to rationalisation and elimination of duplicated programs at the state level.

Uniqueness

Guideline 9

Research and development capabilities in this problem area have not been readily established at Australian educational organisations. The creation of the prospective program will introduce new research and development capabilities to Australian educational organisations.

Guideline 10

The distinction of the program lies in its capacity to provide a better match between instructional materials and educational programs than hitherto provided. This would be accomplished through techniques of qualitative evaluation, and possibly through the introduction in the future of quantitative techniques, based upon an integrated instructional information resource.

Guideline11

Since the techniques and attendant services to be provided by the prospective program are not currently available to the Australian educational community, the prospective program will play a distinctive role in its geographic area.

Viability

- **Planning capability**

Guideline 12

The prospective program has been intiated by persons who have a common interest in its coming to fruition. Evidence is not available that this group of persons is able to provide effective leadership to carry out the program plans. The expertise that these persons have gained during the course of the project, however, would place them in prime positions as potential leaders and consultants. It is possible that effective leadership would only be available from an external source.

- **Potential legal, social, and moral viability**

Guideline 13

The prospective program appears to satisfy potential requirements for legal, social and moral viability in the Australian context. The component in the program, which refers to cooperation with foreign educational organisations, is potentially controversial because Australian educational organisations have been unaccustomed to incorporating such programs in the past.

The prospective program has the potential to address censorship issues dispassionately. The use of techniques to measure qualitative and quantitative data on biases in instructional materials would provide objective information that educators need to counter those who use intuitive arguments to censor the use of controversial materials in schools.

- **Cooperability-cooptability**

Guideline 14

The subsidiary aims of the program are to develop the potential for collaborative relationships with other projects and organisations. Establishment of a relationship with the NSCU project may lead to standardisation of the processes and the products of both programs. Establishment of relationships with organisations from foreign contexts, the

EPIE Institute, the SSEC and the CEIMA - would extend the capabilities for research, development, diffusion and adoption within the prospective program.

Guideline 15

A pilot study will be conducted as part of this evaluation project to determine what support three organisations - the EPIE Institute, the SSEC, and the CEIMA - in North America can provide.

Guideline 16

The prospective program will apply methods, techniques and practices used by three educational organisations in foreign contexts: the EPIE Institute at New York, New York; the SSEC at Boulder, Colorado; and the CEIMA, a consortium of three provincial education departments in Canada. The prospective program will adapt methods, techniques and practices related to work that has been accomplished previously by these organisations. Subsequently, state-of-the-art processes and products, such as, an integrated instructional information resource will be implemented from current research and development work being conducted by the EPIE Institute.

- Parity

Guideline 17

It would be expected that users of the ASCIS database would gain parity as users of the system.

Guideline 18

Representation would be extended to non-users of the ASCIS database on the basis of the capability of the program to service such users.

- Practicality

Guideline 19

The prospective program would embody the properties of accomplishing organisationally defined objectives together with exploratory objectives, characterised by a degree of risk but promising high payoff. The availability of a system of descriptive analytic and evaluative information of records stored on the ASCIS database is consistent with the mission of ASCIS to assist teacher-librarians and teachers select instructional materials. The application to the Australian context of research undertaken at foreign sources involves a risk of its not gaining acceptance but high payoff in providing a better match between instructional materials and educational programs.

Guideline 20

Because of the possibility that the attributes of the new methods, techniques and practices introduced to Australian education could be misunderstood, an effective plan for publicising the prospective program would be needed. Such a plan would direct publicity toward current ASCIS users, stressing the innovative techniques used to analyse qualitative data on instructional materials.

Guideline 21

A starting point for each component of the program is indicated by each objective, which is to be integrated at a particular point in the sequence. A milestone point would be attained at the end of the implementation of the short-term objectives. The ending point

set for the prospective program occurs at the conclusion of implementation of the long-term objectives. This ending point could be reset in the future so as not to preclude the incorporation of objectives, as yet unstated.

- Personnel

Guideline 22

Staff qualifications are relevant to carrying out the tasks of the program. Management personnel would need qualifications in relevant areas of educational administration and educational evaluation. Professional staff would need qualifications in educational evaluation and also in the in-service training program provided by the organisation.

Guideline 23

Professional staff, the analysts of instructional materials, would be experienced classroom teachers and teacher-librarians employed on a part-time basis. They would be trained and certificated in the analytic techniques through the in-service training program.

Guideline 24

It is not possible to provide evidence on the commitment of permanent staff members to the mission of the program. Selection of staff members has not occurred, as yet.

Adequacy of program elements

- Objectives

Guideline 25

•The principal aim of the prospective program is to develop, to design and to implement a clearinghouse for exchanging qualitative information on instructional materials (other than computer courseware) used in Australian schools. Selection of this aim is based upon a priority to introduce short-term objectives for an operational system, partly research and partly service, and to provide a foundation to implement long-term objectives.

The terminal product will provide new knowledge on curriculum materials. The product will be developed by selecting annotated information in the ASCIS database on instructional materials of extensive usage in Australian schools. Descriptive analyses and evaluations of these instructional materials would constitute the initial parameter of the database. Therefore, the aim will establish a balance between providing this novel information and supporting available information on the ASCIS database. Achievement of this aim is expected to make a sharp modification, initially in the knowledge and the attitudes of Australian teachers toward using instructional materials and, thereafter, to make an incremental improvement in their understandings and skills.

Listed in order of priority for development and implementation are six short-term objectives of the principal aim:

1. to determine the types of information to be collected, whether producer, analyst, and user information;
2. to apply a technique of instructional design analysis for the descriptive analysis and evaluation of curriculum materials, that also incorporates criteria to identify biases and to match readability levels of curriculum materials and students' reading levels;
3. to develop a data collection instrument;

4. to implement a program to train and to certificate analysts in the adopted technique for descriptive analysis and evaluation of curriculum materials;
5. to develop software for storage and retrieval of information; and
6. to develop the products for dissemination of information to users.

Listed in order of priority for implementation are seven long-term objectives of the principal aim:

7. to develop the practical means for publicising the program, and for informing users of significant matters concerning educational products, and for collecting information from users;
8. to develop and to implement a teacher education program;
9. to implement guidelines for Australian publishers of instructional materials that comply with learner-based verification and revision requirements;
10. to implement standardised techniques and processes for adopting and selecting instructional materials through a utilisation policy;
11. to initiate research on the uses of instructional materials in the Australian educational context;
12. to investigate the need to provide a consumer protection service; and
13. to initiate the introduction of an integrated instructional information resource and a curriculum alignment service.

Each objective would consist of a specified terminal product, as follows.

1. For objective 1, a pilot study would be initiated to determine the feasibility of collecting product producer information, product analyst information, and product user information in the Australian context.
2. For objective 2, the technique of instructional design analysis would incorporate a widely accepted model of curriculum development, such as, Tyler's objectives model, an interaction model, or a process model, a set of criteria to describe biases, and a technique to quantify readability measures in terms of both materials and learners.
3. For objective 3, the data collection instrument would need to be capable of adaptations for the analysis of educational products in different media and to be capable of revisions based upon criticisms received from educators.
4. For objective 4, the training program would consist of a process to ensure that the training, the certification and the monitoring of prospective analysts were adequate to ensure that an acceptable standard of inter-rater reliability was attained.
5. For objective 5, the software would be compatible with the requirements of both the prospective program and the ASCIS standards, and would be capable of storing and retrieving information to fulfil a broadcast mode and an interactive mode.
6. For objective 6, the products would be available to subscribers through an on-line service and, optionally, through print materials.
7. For objective 7, the practical means would be appropriate to serve the purposes: an informative brochure for general circulation to publicise the program; a newsletter to inform users of significant issues; and self-report forms to gather data on various matters from users.
8. For objective 8, the guidelines for learner-based verification and revision would comply with procedures determined for different techniques (pilot-trial, field-trial, pilot-test, and field-test) and with circumstances when each should be administered by publishers.

9. For objective 9, the teacher development program would emphasise the development of modules both as a means of addressing a range of topics on the uses of educational products in schools and for disseminating the teacher development program widely.
10. For objective 10, the utilisation process would consist of three stages: firstly, practices to adopt instructional materials would be based upon standardised procedures for selection and evaluation; secondly, there would be in-service training on the management of instructional materials; and thirdly, there would be in-service training on matching curriculum materials to the educational program.
11. For objective 11, a research program would be instigated to analyse quantitative data, whether by experimental, quasi-experimental or correlational designs, and qualitative data on significant issues related to the uses of instructional materials in the Australian educational system.
12. For objective 12, self-report measurement instruments would be applied in a pilot study to determine users' opinions on providing a consumer protection service that would act upon complaints.
13. For objective 13, a pilot study would investigate the means whereby an integrated instructional information resource database would be established.

- A subsidiary aim is to provide liaison with the National Software Coordination Unit (NSCU). The intent of such liaison would be to standardise the processes and the products of the two programs, and to maintain the compatibility of other aspects of the programs.

  Specific objectives would be determined through consultation with the NSCU.

- A subsidiary aim is to consult with the Educational Products Information Exchange (EPIE) Institute, the Social Science Education Consortium (SSEC) and the Canadian Exchange for Instructional Materials Analysis (CEIMA) on the nature of cooperation between the prospective program and these three organisations. Because the outcomes of this aim must be determined beforehand, a pilot study is conducted as part of this evaluation project to investigate the implications of such cooperation. The results of this pilot study are reported in the input evaluation.

  Specific objectives would be determined following the pilot study and as a result of subsequent consultations with the respective organisations.

Relevance of objectives to program and institutional goals

Guideline 26

The prospective program will integrate a range of state-of-the-art processes and products to collect, to synthesise and to disseminate data on instructional materials. The completeness and internal consistency of these components is assumed from similar institutional practices in foreign contexts.
The components and the products of the program would integrate the missions of the participating organisations - the ASCIS and the CDC - involved in the prospective program as well as to support the development of the NSCU. The elements of research and development are related to the mission of the CDC, whilst the elements of diffusion and adoption are related to the mission of the ASCIS. The coherence of the prospective program would depend largely upon the coordination of these elements. It can be inferred that the prospective program will be instrumental for the participating organisations to achieve a common mission. At present, the development and the utilisation of

curriculum materials form integral components of the work of the CDC, whilst the mission of the ASCIS is to compile information on instructional materials. The prospective program is likely to integrate such incommensurate components to form a mission common to both organisations.

- **Adequacy of procedural design**

Guideline 27

Two types of procedure would be applied to achieve objectives. When an objective would require that quantitative data are collected and analysed by means of an empirical method, a pilot study would be conducted to achieve such an objective initially. When an objective would depend upon knowledge derived from a research base of information, a procedure for identifying, retrieving and analysing project reports and other documents would be conducted to achieve such an objective initially. A pilot study would be designed to implement the objectives operationally, allowing for the successive incorporation of each of the objectives.

These procedures are selected because they are likely to be appropriate to incorporate objectives successively over a period of time. Such procedures have been applied successfully in foreign contexts.

Mechanisms for both formative and summative evaluation of the prospective program would be included in the pilot study.

- **Methodological adequacy**

Guideline 28

The methodology would be based upon that shown to be appropriate, sufficient and economical in foreign contexts - the United States of America and Canada. On this basis, methodological adequacy would depend upon support from external sources.

- **Appropriateness of schedule**

Guideline 29

At the stage of the presentation of this specification, a fixed schedule has not been assigned to the prospective program. The schedule and the budgetary allocation would be interdependent. The schedule would be planned subsequent to the presentation of a budgetary allocation. It is expected that budgetary factors and the program elements can be matched to determine an appropriate, sufficient and economical schedule.

- **Adequacy of facilities**

Guideline 30

The adequacy of the facilities would depend upon the coordination of the present facilities of both the CDC and ASCIS. The combination of the facilities of both organisations would be appropriate and economical for the work. It would be expected that research activities, however, would not be adequately met by the CDC. In this case, research activities would need substantial support from foreign sources.

Budget

Guideline 31

A detailed budget cannot be supplied at the stage of presentation of this specification.

It would be expected that the fiscal system would correspond with that used by the participating organisations.
It can be expected that organisations from foreign sources, the EPIE Institute, SSEC and CEIMA, would provide resources to support the planning effort.

CHAPTER 5

THE SYSTEM CAPABILITIES AND STRATEGIES

Deficiencies in the reliability and the validity of the methods, the techniques and the practices applied in the Australian context to synthesise data on instructional materials have been identified through the contingency evaluation presented in Chapter 2. This judgment is based upon comparing the methods, the techniques and the practices applied by educational agencies in the Australian and the American contexts. This comparative study led to the specification of objectives and other characteristics for a prospective program, in which reliable and valid techniques are applied to collect, to synthesise and to disseminate information on instructional materials to the Australian educational community on a national basis. Although derived from work conducted in foreign contexts, the specifications for the prospective program pertain to current requirements and conditions in Australian education.

The intent in this chapter is to present an input evaluation that provides information to meet the objectives and other characteristics of the prospective program. In the first part, Relevant Capabilities of Australian Agencies, the research, the development, the diffusion and the adoption activities of two Australian educational agencies, the Curriculum Development Centre (CDC) and the Australian Schools Catalogue Information Service (ASCIS), are assessed on their capabilities to plan, to structure, to implement and to recycle the procedures of the prospective program. On the basis of deficiencies identified through the context evaluation, it is determined that the respective Australian educational agencies must apply large change supported by low information grasp. Accordingly, the planned change model is applied in such a neomobilistic decision setting. In the second part, Strategies for Achieving Program Goals, a survey technique, Policy Implications Analysis (Madey and Stenner, 1981) is used to identify the potential input into the prospective program by three foreign educational organisations, the Educational Products Information Exchange (EPIE) Institute and the Social Science Education Consortium (SSEC) in the United States and the Canadian Exchange for Instructional Materials Analysis (CEIMA) in Canada. Through generating hypothetical findings that may result from planning, structuring, implementing and recycling the procedures of the prospective program, Policy Implications Analysis is applied to elicit data from the responding agencies that may determine the contributory role of each to research, development, diffusion and adoption activities of the prospective program. In part three, Designs for Implementing Strategies, the design for implementing the prospective program is determined by establishing the congruence between the findings of the two previous studies.

The design is based upon a combination of the solutions currently applied by the two Australian educational agencies and the adoption of available solutions from foreign contexts. In the design for implementing the prospective program, the researcher specifies the need for the Australian educational agencies to invite participation from the foreign educational agencies, either to initiate or to support planning, structuring, implementing and recycling research, development, diffusion and adoption activities of the prospective program.

5.1 The Relevant Capabilities Of Australian Agencies

In this section, the purpose is to describe and to assess the relevant capabilities of the two Australian educational organisations, the Curriculum Development Centre (CDC) and the Australian Schools Catalogue Information Service (ASCIS), to assume decision-making authority and responsibility for the preferential plan of the prospective program outlined in Chapter 4. It has been determined through the specifications of the prospective program that the Curriculum Development Centre (CDC) would assume responsibility for the research and development activities, whilst the Australian Schools Catalogue Information Service (ASCIS) would assume responsibility for the diffusion and adoption activities.

5.1.1 The Research Problem

Deficiencies in the methods, the techniques and the practices applied in Australian education to collect, to synthesise and to diffuse information on instructional materials have been identified through the collection of baseline data at both a micro-level in Tasmania and at a macro-level in other Australian states. It has also been identified that these deficiencies are amplified by attributes of duplication and incompleteness demonstrated in the existing program.

The research problem is to identify and to assess the relevant capabilities of the two Australian educational organisations, the Curriculum Development Centre (CDC) and the Australian Schools Catalogue Information Service (ACSIS), to assume decision-making authority and responsibility for the preferential plan of the prospective program.

The study tested the following problem concerning the assessment of the relevant capabilities of Australian educational organisations. If substantial deficiencies in the reliability and the validity of techniques were identified through data analyses in the context evaluation, then the objectives for large change with a low information grasp are to be specified for a planned change model infusing innovative methods, techniques and practices to invent, to test and to diffuse solutions to the problem.

Two procedures were applied to test the research problem: firstly, the decision-setting and the decision model were identified by applying procedures for educational decision-making described by Stufflebeam et al. (1971b); and secondly, the relevant capabilities of the two Australian educational organisations were assessed according to the planned change model of Clark and Guba (1967).

5.1.2 The Method

5.1.2.1 The Design

The design applied by the researcher is derived from the procedures for educational decision-making described by Stufflebeam et al. (1971b: 49-105). Briefly, these procedures

consist of four stages: firstly, defining the problem through the four elements - awareness, design, choice and action - of the decision-making process; secondly, determining the decision-setting, that is, whether the problem is set in a homeostatic, incremental, neomobilistic, or metamorphic decision-setting; thirdly, applying the appropriate decision model - whether it is the synoptic ideal model, the disjointed incremental model, or the planned change model - following determination of the type of the decision-setting; and fourthly, accounting for the types of decisions applied, whether planning, structuring, implementing and recycling decisions.

Once these procedures had been applied, a flow chart, reproduced as Figure 1, was described for planning and structuring decisions. At the final stage of the flow chart, Programming of the Entire Change Process, a procedure for assessing implementing and recycling decisions in the activities of research, development, diffusion and adoption for the prospective program was identified. This procedure is now described for the planned change model by applying eleven processes, each with specified criteria: research; invention; design; construction; assembly; dissemination; demonstration; training; trial; installation; and institutionalisation. The relevant capabilities of the Curriculum Development Centre (CDC) are assessed on the criteria that relate to research and development activities, the relevant capabilities of the Australian Schools Catalogue Information Service (ASCIS) are assessed on the criteria that relate to diffusion activities, whilst both the Curriculum Development Centre (CDC) and the Australian Schools Catalogue Information Service (ASCIS) are assessed on criteria for adoption activities. Data are assessed on the objectives and the criteria specified by Clark and Guba (1967) for the planned change model.

5.1.2.2 Data Collection Method

A specific procedure was not applied to collect data at this stage. Data collected during the conduct of the context evaluation formed the basis of information used to determine the relevant capabilities of the appropriate Australian educational organisations.

5.1.2.3 Data Analysis

A procedure, based upon subjective intuitive process, was applied to synthesise the data and to form judgments.

5.1.3 The Results

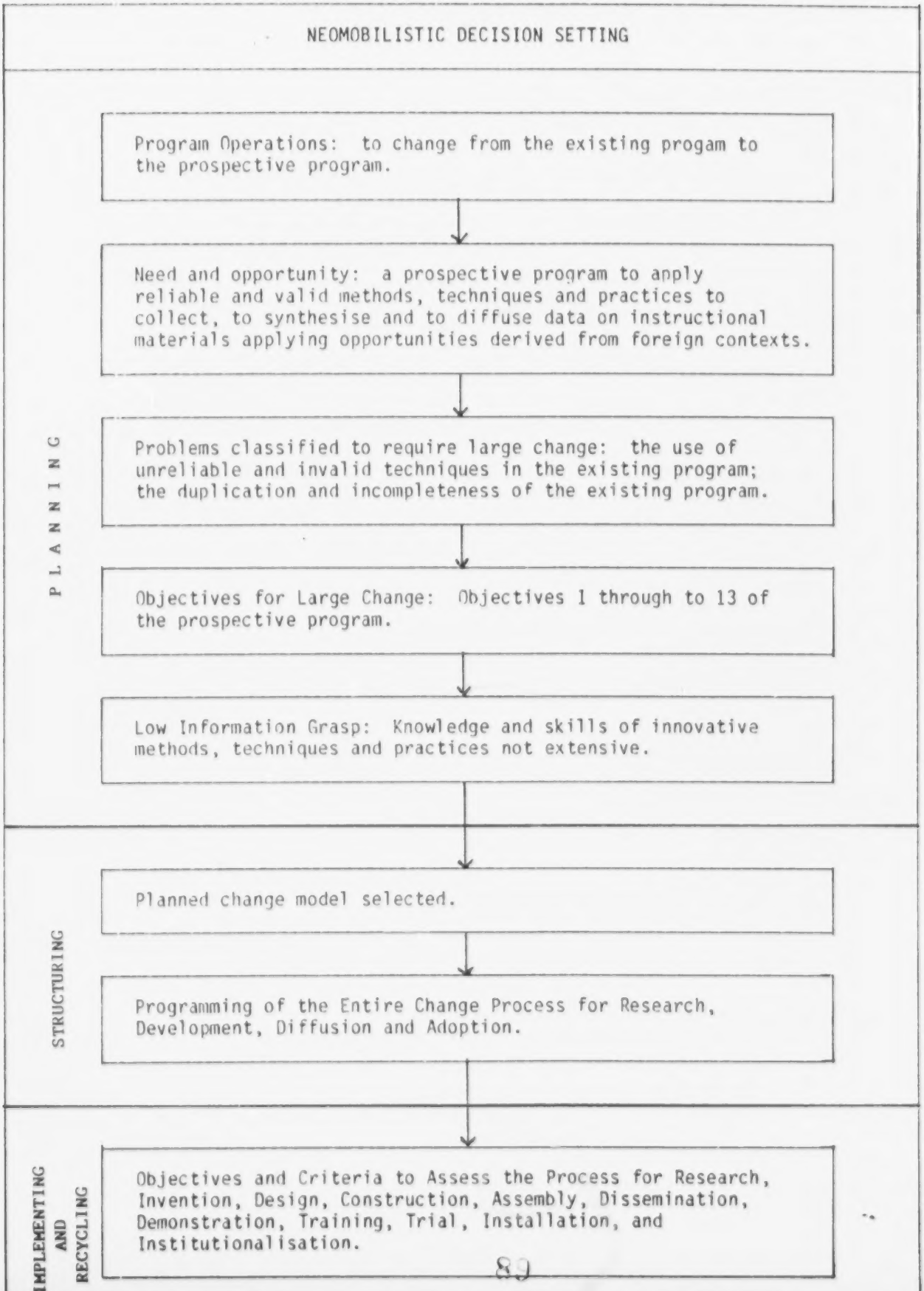
The research problem is to identify and to assess the relevant capabilities of the Curriculum Development Centre (CDC) and the Australian Schools Catalogue Information Service (ASCIS) to assume decision-making authority and responsibility for the preferential plan of the prospective program.

Figure 1 illustrates the application of the procedures for educational decision-making, described by Stufflebeam et al. (1971b), to the research problem. The flow chart, to be read from top to bottom, shows that problem-solving and change from the existing program to the prospective program are to be met by application of innovative methods, techniques and practices, derived from foreign contexts, to data on instructional materials. Based upon the diagnosis of problems constraining the needs being met, the researcher judged that the objectives of the prospective program require significant changes to important variables. On the basis of the limited extent of information available to Australian education on these innovative methods, techniques and practices, the researcher determined that a low information

FIGURE 2 : A PROCESS CHART DEPICTING THE INITIAL ROLES OF AUSTRALIAN EDUCATIONAL ORGANISATIONS FOR PLANNED CHANGE WITHIN THE PROSPECTIVE PROGRAM

ACTIVITY	AGENCY	PROCESS	OBJECTIVE	CRITERIA	CAPABILITY
Research	Curriculum Development Centre (CDC)	Research	To advance knowledge	Internal and external validity	Entirely deficient
Development	Curriculum Development Centre Centre (CDC)	Invention	To formulate a new solution to an operating problem	Face validity, estimated validity, impact	Mostly deficient
		Design	To draft a plan for constructing the program	Feasibility, tractability	Mostly sufficient
		Construction	To build the components	Design specifications, individual performance	Mostly sufficient
		Assembly	To integrate the components into an operating system	Design specifications, total performance, viability, efficiency	Mostly sufficient
Diffusion	Australian Schools Catalogue Information Service (ASCIS)	Dissemination	To create widespread awareness of the program among practitioners	Intelligibility, fidelity, pervasiveness, impact	Mostly sufficient
		Demonstration	To afford an opportunity to examine and assess operating qualities of the program	Credibility, convenience, evidential assessment	Mostly sufficient
Adoption	Curriculum Development Centre (CDC) and Australian Schools Catalogue Information Service (ASCIS)	Training	To train local personnel to manage operate, service, utilise the program	Quantity, continuity, aptitudes, motivation, proficiency	Mostly deficient
		Trial	To build familiarity with the program and provide a basis for assessing the fit of the program in a particular institution	Adaptability, feasibility, action	Mostly sufficient
		Installation	To fit the characteristics of the program to the characteristics of the adopting institution	Effectiveness, efficiency	Mostly sufficient
		Institution-alisation	To assimilate the invention as an integral component of the system	Continuity, valuation, support	Mostly sufficient

FIGURE 1: A FLOW CHART OF ATTRIBUTES IN DECISION-MAKING FOR THE PROSPECTIVE PROGRAM


NEOMOBILISTIC DECISION SETTING
PLANNING
Program Operations: to change from the existing progam to the prospective program.
Need and opportunity: a prospective program to apply reliable and valid methods, techniques and practices to collect, to synthesise and to diffuse data on instructional materials applying opportunities derived from foreign contexts.
Problems classified to require large change: the use of unreliable and invalid techniques in the existing program; the duplication and incompleteness of the existing program.
Objectives for Large Change: Objectives 1 through to 13 of the prospective program.
Low Information Grasp: Knowledge and skills of innovative methods, techniques and practices not extensive.
STRUCTURING
Planned change model selected.
Programming of the Entire Change Process for Research, Development, Diffusion and Adoption.
IMPLEMENTING AND RECYCLING
Objectives and Criteria to Assess the Process for Research, Invention, Design, Construction, Assembly, Dissemination, Demonstration, Training, Trial, Installation, and Institutionalisation.

grasp prevails. The planned change model was selected on the basis of its prescription by Stufflebeam et al. (1971b, 71-78) for neomobilistic change.

Figure 2 illustrates the application of the planned change model for implementing and recycling decisions to the research problem. On the basis of little information on the potential application of the prospective program to a likely configuration, in which the Curriculum Development Centre (CDC) would appropriate the main responsibilities for the research and development activities whilst the Australian Schools Catalogue Information Service (ASCIS) would appropriate the main responsibility for the diffusion activity and co-operate in sharing responsibility with the Curriculum Development Centre (CDC) for the adoption activity, the researcher judged the capabilities of the respective agencies on each objective of the change process, as follows. The researcher applied a Likert-type rating scale of five points, labelled, 'entirely sufficient', 'mostly sufficient', 'uncertain', 'mostly deficient' and 'entirely deficient', to assess potential capability.

1. For the objective on research, the capability of the CDC to advance knowledge that provides a basis for invention is judged to be entirely deficient.
2. For the objective on invention, the capability of the CDC to formulate new solutions to operating problems that produce inventions is judged to be mostly deficient.
3. For the objective on design, the capability of the CDC to draft a blue-print that fits the target situation is judged to be mostly sufficient.
4. For the objective on construction, the capability of the CDC to construct the components for implementing the design is judged to be mostly sufficient.
5. For the objective on assembly, the capability of the CDC to integrate the components to produce a co-ordinated operating system is judged to be mostly sufficient.
6. For the objective on dissemination, the capability of the ASCIS to create widespread awareness of the prospective program is judged to be mostly sufficient.
7. For the objective on demonstration, the capability of the ASCIS to afford opportunities to examine and to assess the operating qualities of the prospective program is judged to be mostly sufficient.
8. For the objective on training, the capability of both the CDC and the ASCIS to train personnel to manage, to operate, to service and to utilise the prospective program is judged to be mostly deficient.
9. For the objective on trial, the capability of both the CDC and the ASCIS to trial the prospective program in the context of a particular situation is judged to be mostly sufficient.
10. For the objective on installation, the capability of the CDC and the ASCIS to operationalise the prospective program within the adopting agencies, the CDC and the ASCIS, is judged to be mostly sufficient.
11. For the objective on institutionalisation, the capability of the CDC and the ASCIS to establish the prospective program as part of an ongoing program is judged to be mostly sufficient.

5.1.4 The Discussion

The study identified and assessed the relevant capabilities of the two Australian educational organisations, the Curriculum Development Centre (CDC) and the Australian Schools Catalogue Information Service (ASCIS), to assume decision-making authority and responsibility for the preferential plan of the prospective program.

It was assumed that these agencies would be deficient in implementing and recycling decisions when valid and reliable techniques to collect, to synthesise and to diffuse information on

instructional materials are to be applied extensively to these activities, because of the substantial deficiencies identified in the sorts of techniques applied in current Australian practice. On the other hand, it was assumed that the agencies would be sufficient in implementing and recycling decisions when these techniques are not to be applied extensively to such activities.

The results of the application of the planned change model to the research problem showed that the Australian agencies assuming responsibility for the preferential plan of the prospective program vary in their capabilities for implementing and recycling decisions, as follows: they are deficient in research activities; they are sufficient in most development activities; they are sufficient in diffusion activities; and they are sufficient in most adoption activities.

The results indicate that large change is required to structure, to implement and to recycle decisions in cases when techniques to collect, to synthesise and to diffuse information on instructional materials are to be applied extensively. Based upon a low level of information grasp, such an assessment raises the necessity that the decision model to support the prospective program requires the projection of an extensive set of steps to accomplish such large change. This is needed if the prospect for success of the prospective program is to be met.

This conclusion does not only apply to those activities in which techniques to collect, to synthesise and to diffuse information on instructional materials are to be applied extensively, but also is addressed to those activities in which these techniques are not applied extensively. In no case was the capability of the Australian agencies judged to be entirely sufficient. The potential effectiveness of the Australian educational agencies to conduct these activities cannot be assumed. Neither evidence to this effect is available nor have comparative studies been conducted to assess the achievements of American and Australian educational agencies to plan, to structure, to implement and to recycle decisions. In spite of this lack of information, it is reasonable to presume that Australian educational agencies, which are still working at a developmental stage in accomplishing the capabilities to plan, to structure, to implement and to recycle decisions, are less able to perform these processes than more established American educational organisations.

5.2 Strategies For Achieving Program Goals

In this section, the purpose is to assess the strategies that foreign educational organisations might employ to achieve the goals of the prospective program. This assessment was made through the administration of a questionnaire, Survey of Attitudes on Potential Foreign Input into the Prospective Program in Australian Education, to the staff members of three foreign educational organisations: the Educational Products Information Exchange (EPIE) Institute; the Social Science Education Consortium (SSEC); and the Canadian Exchange for Instructional Materials Analysis (CEIMA). The researcher had identified that each of these three educational organisations maintained the potential to extend some form of involvement into the prospective program for Australian education defined in this report. In each case, the researcher had identified such potential through communications during an extensive period in which the staff members of each organisation had expressed either explicitly or implicitly an interest in collaborating with Australian educational organisations on work in the area of the prospective program.

5.2.1 The Research Problem

The context evaluation of this research project has indicated that the relevant capabilities of the Curriculum Development Centre and the Australian Schools Catalogue Information Service to provide research, development, diffusion and adoption activities of the prospective program are adequate in some attributes but inadequate in other attributes. It has been identified that significant inadequacies exist in institutional capability, program elements, management, personnel, funding, schedule, facilities and communication for the research activity, for the development activity of invention and for the adoption activity of training.

The study sought to determine the following general objective concerning strategies to achieve the goals of the prospective program. The general objective is to determine the extent of potential foreign input into the prospective program in Australian education.

If the relevant capabilities of the Australian educational organisations to be coopted into the prospective program are inadequate, in part, to implement the prospective program successfully, a case can be made that educational organisations conducting similar programs successfully in foreign settings should be provided with the opportunities to contribute new methods, techniques and practices to support the prospective program. The study investigated three specific objectives concerning the attributes of the potential foreign input into the prospective program in Australian education: firstly, the relationship between forecasted scenarios for the prospective program and the capability of the foreign educational organisations to provide input need to be identified; secondly, the attributes of policy actions on the part of foreign educational organisations, arising from the forecasted scenarios, need to be identified; and thirdly, recommendations on the part of foreign educational organisations to revamp the prospective program need to be elicited.

5.2.2 The Method

5.2.2.1 The Target Population

The target population for the Survey of Attitudes on Potential Foreign Input into the Prospective Program in Australian Education comprised a panel of staff members of three foreign educational organisations, which have as their missions, the collection, the synthesis and the diffusion of data on instructional materials. Selection of these organisations had been based initially upon a perception that each of these organisations possessed the potential to contribute to Australian education innovative methods, techniques and practices on the uses of instructional materials. Prior to the conduct of the survey, a response on the prospective participation of each organisation was sought through correspondence.

The staff members, who responded to the survey, belonged to the three foreign educational organisations listed below.

Site 1: The Educational Products Information Exchange (EPIE) Institute located at the site of the Teachers College, Columbia University, New York, New York, United States of America.

Site 2: The Social Science Education Consortium (SSEC), located at the site of the University of Colorado, Boulder, Colorado, United States of America.

Site 3: The Canadian Exchange for Instructional Materials Analysis (CEIMA), a consortium of the Ministry of Education, British Columbia, Alberta Education, and Manitoba Education, Canada.

5.2.2.2 The Measurement Instrument

The questionnaire, Survey of Attitudes on Potential Foreign Input into the Prospective Program in Australian Education, is based upon an example of the type of instrumentation applied to Policy Implications Analysis reported by Madey and Stenner (1981:32-36). This type of

measurement instrument has been used by the NTS Research Corporation, Durham, North Carolina, in several longitudinal evaluations of federal educational programs in the United States, including the State Capacity Building Program for the National Institute of Education (NIE), United States Department of Education. This questionnaire is derived from the measurement instrument administered as part of that example of Policy Implications Analysis. The development of the questionnaire followed the procedure used by Madey and Stenner. Eight of the twelve major components of criteria, specified in the guidelines for proposals (Stufflebeam et al., 1971a: 102-183), were modified to form the parts of the questionnaire: institutional capability; program elements; management; personnel; funding; schedule; facilities; and communication.

Development of this instrument passed through two stages. To begin, generation of a hypothetical finding for each of the criteria represented the first stage. Each statement contained a hypothetical, but theoretically possible, finding which could result from the implementation of the input evaluation of this project. Each Finding Statement, the item of the questionnaire, was intended to represent the likely outcome of its implementation. A set of Guidelines, Significant Policy Implications and a Funding Statement, based upon those applied by Madey and Stenner, constituted the response section of each part.

The second stage in the development of the questionnaire concerned its revision. It was recognised that either of two likely scenarios could be represented by the implementation of the input evaluation. This caused the researcher to develop hypothetical findings that represented each scenario. At the same time, it was recognised that the scope of the Program Elements, derived from the thirteen objectives stated in Chapter 4, was too extensive. It was decided then that the hypothetical finding for the Program Elements would be restricted to the six, short-term objectives. At this point, the researcher felt that both the length of the questionnaire and time required to complete it were too extensive. It was decided that a balance could be obtained between these elements and the quantity of data by combining pairs of those other components, exhibiting common relationships, to form single finding hypotheses, as follows: management and personnel; funding and schedule; and facilities and communication. The final form of the questionnaire, reproduced as Appendix E, was composed through these revisions.

5.2.2.3 Design

The design of the procedures for the study is determined by the requirements of Policy Implications Analysis defined by Madey and Stenner. Policy Implications Analysis is a procedure designed to enhance the likelihood that an evaluation will have an impact upon decision-making. The Policy Implications Analysis method applies two futures techniques: the Delphi Method; and Scenario Writing. The method employs six steps: firstly, the generation of hypothetical findings; secondly, the preparation of a questionnaire to be administered to a selected panel of respondents; thirdly, the selection of a panel of respondents; fourthly, the administration of the questionnaire to the panel; fifthly, the analysis of the responses; and lastly, the use of the analysed responses to develop a set of policy-relevant hypotheses.

It is apparent that Policy Implications Analysis is a useful design to apply to input evaluation. Ostensibly, Policy Implications Analysis is applied for this purpose in reported studies (Madey et al., 1980; McNeil et al., 1980). The essential difference between its application in the reported studies and this study pertains to the mode of context to which Policy Implications Analysis is applied. In the reported studies, Policy Implications Analysis has been applied

within congruence evaluations. In this study, the intention is to apply Policy Implications Analysis in the contingency mode.

5.2.2.4 Data Collection Methods

A copy of the questionnaire, Survey of Attitudes on Potential Foreign Input into the Prospective Program in Australian Education, was circulated by mail to a designated staff member of each educational organisation during April, 1988. A request was made that the completed questionnaire should be returned at the close of June, 1988. This deadline was then extended until the close of September, 1988 for two reasons: first, the staff members of two educational organisations, the Social Science Education Consortium and the Canadian Exchange for Instructional Materials Analysis, replied expressing difficulties in completing the questionnaire; and second, another staff member of the Canadian Exchange for Instructional Materials Analysis, working in a different Canadian province, expressed an interest in responding to the questionnaire.

5.2.2.5 Data Analysis

A procedure, based upon subjective intuitive process, was applied to synthesise the data and to form judgments on the findings of the Survey of Attitudes on Potential Foreign Input into the Prospective Program in Australian Education.

5.2.3 The Results

The research problem is to identify and assess the strategies that three foreign educational organisations can apply to achieve the goals of the prospective program for Australian education.

5.2.3.1 The Educational Products Information Exchange (EPIE) Institute

Komoski (1988) stated that the EPIE Institute intended to respond to the Survey of Attitudes on Potential Foreign Input into the Prospective Program in Australian Education by the deadline at the close of September 1988. Receipt of the completed questionnaire administered during the survey, however, had not been received at the time of writing this statement for the report. It is anticipated that the results of the Survey will be presented as an Addendum to this report at a future date.

Komoski (1988) did present a general statement confirming the continued interest of the EPIE Institute in the proposal being developed in this report, as follows.

> "EPIE continues to have a great interest in working out a means of assisting Australian educators to improve the evaluation, selection, and use of instructional materials."

5.2.3.2 The Canadian Exchange for Instructional Materials Analysis (CEIMA)

Representing Manitoba Education within the consortium of three provincial education departments constituting the CEIMA, Parasuik (1988) completed the Survey of Attitudes on Potential Foreign Input into the Prospective Program in Australian Education, and also presented the following summary statement.

> "In general, I can state that we would be willing to share information on our experiences in establishing our Materials Selection Process by phone or through the mail, in response to specific requests. We are interested in pursuing the possibility of more involved activities in the form of-

TABLE 7.

RESPONSES TO GUIDELINES FOR HYPOTHETICAL FINDINGS

CEIMA (MANITOBA EDUCATION)

Guideline	Institutional Capability (Preferential)	Institutional Capability (Optional)	Program Elements (Objectives 1-6)	Management Personnel	Funding Schedule	Facilities Comm-unicatior
1. To what degree is this finding within the purview of your organisation?	3	10	3	3	4	5
2. How much knowledge do you have of the general area addressed by the findings?	2	8	1	2	3	3
3. To what degree does this finding correspond with your expectations?	8	10	3	3	4	4
4. To what degree does this finding have immediate policy implications for a potential relationship between the prospective program and your organisation?	7	1	4	3	4	5
5. Given that this finding reflects reality, is it stated in a concise and clear fashion?	3	1	1	2	2	2

Note 1. Key to interval scale

positive					negative
1	3	5	7	9	10

providing training in the EPIE or CEIMA process. Such potential involvement, of course, would be dependent on the cost implications to Manitoba Education."

Table 7 shows the reponses to each guideline provided by Manitoba Education. The results have clear implications for significant input by Manitoba Education into the preferred scenario for the prospective program. The results indicate that Manitoba Education may be prepared to provide important input into the subactivity of training within the prospective program.

The respondent generated significant policy actions for hypothetical findings on institutional capability (preferential) and institutional capability (optional). For the preferential form of institutional capability, the repondent generated the following policy action.

"None, provided assistance is limited to sharing data and information on Learning Materials procedures."

For the optional form of institutional capability, the respondent generated the following policy action.

"A decision to commit fiscal resources to an off-shore project."

The respondent expressed the need for further information in order for policy actions to be generated for hypothetical findings on the program elements (objectives 1 to 6), management-personnel, and funding-schedule. For objectives 1 to 6 of the program elements, the respondent expressed the need for:

"Information as to whether or not costs associated with training-inservice, etc., would be covered by Australian agencies."

For the management-personnel component, the respondent expressed the need for:

"Clarification regarding proposed training, consultative modes, cost implications, etc."

For the funding-schedule component, the respondent expressed the need for:

"Detailed project descriptors, possible time commitments, possible communication links, and costs."

No responses to Finding Statements were presented by this respondent.

Although staff members representing the Ministry of Education, Province of British Columbia within the consortium constituting the CEIMA failed to respond to the questionnaire, the following statement, received from McArthur (1988), presents implications for establishing future contact between the personnel of the prospective program and the Learning Resources Branch of the Ministry of Education, Province of British Columbia, Canada.

"Since our initial correspondence last year, the Ministry of Education in British Columbia has reorganized some of its Branches. The acquisition and selection of learning resources has been made the responsibility of a new Branch entitled Learning Resources.

This Branch has as part of its mandate the bringing together of the various evaluation formats currently in use for print, video and software with the intent to evaluate all resources from a common perspective.

For these reasons, I cannot proceed with definitive information on the role of CEIMA in terms of your proposal. As I mentioned in my last letter, your questionnaire was extremely complex and quite site and context specific. It would be difficult to determine your organizational needs, given that our own policies and procedures may undergo revision."

5.2.3.3 The Social Science Education Consortium (SSEC)

Although the staff members of the Social Science Education Consortium failed to respond to the questionnaire, the following statement received from Singleton (1988) presents an implication for the results of the survey.

"I received your recent letter regarding our problems in responding to your questionnaire and have discussed the issue with our director and other staff members. We gave serious consideration to your proposed 'compromise' forms of responding; however, because we are a specialised organisation focusing on social studies/social science education and your project will involve all curricular areas, we do not feel well qualified to participate in the project. Certainly, an organisation with a broader curriculum base, like EPIE, could more readily provide the services for which

you are looking. Thus, we feel that we cannot invest time in responding to the questionnaire at this time."

5.2.4 The Discussion

The research problem is to identify and assess three foreign educational organisations on the strategies that each can apply to achieve the goals of the prospective program for Australian education.

The major findings of the study reported are conclusive with regard to the strategies that the Canadian Exchange for Instructional Materials Analysis (CEIMA) and the Social Science Education Consortium (SSEC) can apply, but inconclusive with regard to the strategies that the Educational Products Information Exchange (EPIE) Institute can apply to the prospective program. Within the consortium of the CEIMA, Manitoba Education indicated that it will be prepared to share with Australian educators information on establishing its system for collecting, synthesising and disseminating information on instructional materials and, perhaps, to contribute towards the subactivity of training. On the other hand, conclusive information concerning the potential involvement of the Ministry of Education, Province of British Columbia was not forthcoming. The Social Science Education Consortium (SSEC) indicated conclusively that it did not maintain the resources to contribute stategies to support the goals of the prospective program. Although the EPIE Institute did not respond to the survey within the specified time, this organisation is presumed to be the foreign organisation that can make the most extensive contribution of strategies to support the goals of the prospective program. It is predicted that this support could extend to the EPIE Institute providing strategies to achieve the goals of the prospective program for each of the eleven subactivities: research; invention; design; construction; assembly; dissemination; demonstration; training; trial; installation; and institutionalisation. The actual extent of this potential support needs to elicited and identified through further communication with the EPIE Institute and research on the topic.

The main limitation of this study is the incompleteness of the reported data. Consequently, it is possible only to present a tentative plan of the procedural design for the prospective program on the basis of available data. A second limitation of the study is predicted to be a possibility that the findings are biassed because of the likelihood that the respondents would be unfamiliar with organisations and programs in Australian education.

5.3 Designs for Implementing Strategies

In this section, the purpose is to determine the congruence between the findings of the two previous studies. The optimal procedural design for implementing and recycling activities in the prospective program is most likely to be determined by establishing the congruence between the capabilities of the Australian organisations and the strategies that the foreign organisations can employ to achieve the goals of the prospective program.

5.3.1 The Research Problem

In the first study presented in this chapter, the relevant capabilities of the Australian educational organisations, the Curriculum Development Centre (CDC) and the Australian Schools Catalogue Information Service (ASCIS), have been assessed as entirely deficient in the subactivity of research, mostly deficient in the subactivities of invention and training, but mostly sufficient in the subactivities of design, construction, assembly, dissemination, demonstration, trial, installation and institutionalisation. From among the three foreign

educational organisations surveyed in the second study, both the Educational Products Information Exchange (EPIE) Institute and the Canadian Exchange for Instructional Materials Analysis (CEIMA) possess the latent capabilities to employ strategies to achieve the goals of the prospective program. The capabilities of this potential have been assessed in the second study for the CEIMA but not for the EPIE Institute.

The research problem is to establish the congruence between the relevant capabilities of the Australian educational organisations and the strategies that foreign educational organisations can employ to achieve the goals of the prospective program.

The study tested the following question concerning the congruence between the relevant capabilities of the Australian organisations and the strategies to be employed by the foreign educational organisations. If deficiencies exist in the capabilities of Australian organisations to implement and recycle the research, development, diffusion and adoption activities of the prospective program, then these deficiencies can be ameliorated most effectively through the application of strategies by foreign educational organisations to achieve the program goals.

The research plan entailed testing the problem at two stages: at the first, the means whereby the Australian educational organisations would structure decisions on the optimal procedural design for the prospective program were planned; and at the second, the means and ends whereby both the Australian and foreign educational organisations would implement and recycle the optimal procedural design for the prospective program were assessed.

5.3.2 The Method

5.3.2.1 The Design

The design applied by the researcher extends the application in the first study of the procedures for educational decision-making described by Stufflebeam et al. (1971b: 49-105). In this study, the procedures for decision-making are applied to produce an end product of the input evaluation, an analysis of the procedural design in terms of the collaborative relations between both the Australian and foreign educational organisations. The planned change model is applied to test the problem at each of two stages: at the first, the model is used to provide an action plan whereby the Australian educational organisations would structure the processes of the prospective program; and at the second, the model is used to present the optimal procedural design whereby both the Australian and foreign educational organisations would implement and recycle the processes of the prospective program.

At the first stage, the taxonomy used by Stufflebeam et al. (1971b: 71-78) to describe the change process for structuring decisions in the activities of research, development, diffusion and adoption is arrayed against the roles of agencies, the objectives, some criteria associated with the objectives, and the relationship of the objectives to the change process in Figure 3. The use of this taxonomy allowed the researcher to structure the decisions of the change process so that the congruence between the relevant capabilities of the Australian educational organisations and the strategies that the foreign educational organisations might employ together to implement and recycle decisions in the change process could be assessed at the second stage. In this way, it is possible to describe and classify the attributes for structuring decisions of the change process in the prospective program.

At the second stage, the taxonomy used by Stufflebeam et al. (1971b: 71-78) to describe the change process for implementing and recycling decisions in the activities of research, development, diffusion and adoption, is arrayed in Figure 4 against seven of twelve guidelines or categories specified by Stufflebeam et al. (1971a): program elements; management;

personnel; funding; schedule; facilities; and communication. The attributes assessed in the study were judged on each of three criteria derived from Stufflebeam et al. (1971b: 293-302): administrative role; interface role; and technical role. These criteria, defined by Stufflebeam et al. (1971b) as encompassing the essential components of evaluation specialists' roles, were selected as appropriate to describe the roles of educational organisations in the change process within the prospective program. Administrative roles entail directorship, management and coordination, interface roles entail identifying decision situations and provision of relevant information for decision-making, and technical roles entail measurement, data collection and processing, design, and statistical analysis. The use of these procedures in the research design allowed the researcher to make global assessments on each criterion by classifying and controlling the attributes examined at the second stage.

Furthermore, the assessment made of the problem, as tested at the second stage of this study, is conditional upon decision-makers taking account of two sets of problems on nesting referred to by Stufflebeam et al. (1971b: 87-93): firstly, problems arising from multiple decision-makers relating to the same decision; and secondly, problems arising from the interdependency of decisions. For the first set of problems, Stufflebeam et al. (1971b) caution evaluators to recognise potential conflict situations arising from these problems without recommending action. They state that educational evaluators lack the capabilities to meet the evaluation needs posed by these types of problems. Stufflebeam et al. (1971b) also caution evaluators to recognise two types of problems arising from the interdependency of decisions: firstly, previous decisions have a bearing on future decisions; and secondly, higher order decisions influence or constrain lower order decisions.

5.3.2.2 Data Collection Method

A specific procedure was not applied to collect data in this study. For data applicable to the Australian context, those applied in this study had been collected during the context evaluation and processed in the first study. For data applicable to foreign contexts, those collected during the conduct of the second study formed the basis of information in this study.

5.3.2.3 Data Analysis

A procedure, based upon subjective intuitive process, was applied to synthesise the data and to form judgments during the second stage. By analysing the data obtained during the first study, an assessment was made of the extent to which the Australian educational organisations could achieve the goals of the prospective program on specific subactivities. This analysis was matched against an assessment of the extent to which the foreign educational organisations could support the goals of the prospective program on specific subactivities from the results derived in the second study. From these analyses, global judgments were made on the types of relations between the different educational organisations, both Australian and foreign, needed to implement and recycle decisions in the optimal procedural design for the prospective program on categorical levels for the three criteria: administrative role; interface role; and technical role.

5.3.3 The Results

The research problem is to establish the congruence between the relevant capabilities of the Australian educational organisations and the strategies that foreign educational organisations can employ to achieve the goals of the prospective program.

FIGURE 3 : AN ACTION PLAN DEPICTING THE PROCESS FOR STRUCTURING DECISIONS IN THE OPTIMAL PROCEDURAL DESIGN FOR THE PROSPECTIVE PROGRAM

ACTIVITY	ROLES OF AGENCIES	OBJECTIVE	PROCESS	CRITERIA	RELATIONSHIP OF OBJECTIVE TO CHANGE
RESEARCH	CDC reviews evaluator's report, EPIE and CEIMA research	To determine knowledge by depicting, correlating, conceptualising and testing information on current programs for collecting synthesising and disseminating information on instructional materials	Research	**Internal validity:** true representation of the information **External validity:** Is the information generalisable?	Provides basis for the development of the prospective programs
DEVELOPMENT	CDC implements recommendations in evaluator's report, communicates with EPIE and CEIMA on prospective collaboration	To formulate a new program for collecting, synthesising and disseminating information on instructional materials by applying the findings of research	Invention	**Face validity:** representative of national needs. **Estimated viability** in terms of potential impact	Produces prospective program for design stage
	Collaborating with EPIE, CDC drafts the plan for the prospective program	To draft a plan for constructing the new program	Design	**Feasibility** and **tractability**	Produces plan to construct the prospective program
	Collaborating with EPIE CDC builds the components of the prospective program	To build the components of the new program	Construction	**Design specifications:** Does it follow the plan? **Individual performance:** Does it work according to plan?	Produces the components necessary for implementing
	Collaborating with EPIE, CDC integrates the components into an operating program	To ingegrate the components into an operating program	Assembly	**Design specifications:** Does the total system follow the plan? **Total performance:** Will it work under normal conditions?	Produces the co-ordinated operating plan for the design of the prospective program

DIFFUSION	Collaborating with EPIE, ASCIS creates widespread awareness of the prospective program	To create widespread awareness of the new program among client groups and key audiences	Dissemination	**Intelligibility:** Is the information complete, concise and relevant? **Fidelity:** Does it describe the progam clearly and truthfully? **Pervasiveness:** Does it reach all parts and levels of the program?	Provides information about prospective program
	Collaborating with EPIE, ASCIS provides opportunities to examine and assess the prospective program	To afford an opportunity for client groups and key audiences to examine and assess the operating qualities of the new program	Demonstration	**Credibility, convenience, evidential assessment**	Provides on-site assessment of the design for the prospective program, or requires the process to be recycled if the program is inadequate
ADOPTION	Collaborating with EPIE, and CEIMA CDC and ASCIS train local personnel	To train local personnel to manage, operate, service and utilise the new program	Training	**Quality, continuity, aptitude, motivation,** and **proficiency** of trained personnel	Establishes and maintains the viability of operating the prospective program
	Collaborating with EPIE, CDC and ASCIS trial the prospective program in a regional or national setting	To build familiarity with the new program and to provide a basis for assesing the quality, value, fit, and utility of the program in the adopting institutions	Trial	**Adaptability, feasibility,** and **action**	Trial of the prospective program in the setting to be implemented
	Collaborating with EPIE, CDC and ASCIS operationalise the prospective program in the national setting	To fit the characteristics of the program to the characteristics of the adopting institutions	Installation	**Effectiveness** and **Efficiency**	Operationalise prospective program for use in the specified situation
	Collaborating with EPIE, CDC and ASCIS establish the prospective program as part of the on-going activities	To assimilate the program as an integral and accepted component of the system	Institutionalisation	**Continuity:** Is the program a a functioning component of the system? **Valuation:** Do practitioners rely on and defend its retention? **Support:** Can the adopting agency afford its maintenance and periodic updating?	Establish the prospective program as part of the on-going activities in the specified situation

FIGURE 4 : AN INTEGRATED PLAN DEPICTING COLLABORATIVE RELATIONSHIPS BETWEEN EDUCATIONAL ORGANIZATIONS FOR IMPLEMENTING AND RECYCLING DECISIONS IN THE PROSPECTIVE PROGRAM

ACTIVITY	OBJECTIVE	PROCESS	PROGRAM ELEMENTS	MANAGEMENT	PERSONNEL	FUNDING	SCHEDULE	FACILITIES	COMMUNICATION
RESEARCH	To advance knowledge	Research	Configuration D	Configuration C	Configuration C	Configuration D	Configuration C	Configuration C	Configuration C
DEVELOPMENT	To formulate the new solution to the operating problem	Invention	Configuration D	Configuration C	Configuration C	Configuration D	Configuration C	Configuration C	Configuration C
	To draft the plan for the new program	Design	Configuration D	Configuration A	Configuration A	Configuration A	Configuration A	Configuration A	Configuration A
	To build the components of the new program	Construction	Configuration D	Configuration A	Configuration A	Configuration A	Configuration A	Configuration A	Configuration A
	To integrate the components into an operating program	Assembly	Configuration D	Configuration A	Configuration A	Configuration A	Configuration A	Configuration A	Configuration A
DIFFUSION	To create widespread awareness of the program	Dissemination	Configuration G	Configuration E	Configuration E	Configuration E	Configuration E	Configuration E	Configuration E
	To afford an opportunity to examine and assess the operating qualities of the program	Demonstration	Configuration G	Configuration E	Configuration E	Configuration E	Configuration E	Configuration E	Configuration E

ADOPTION	To train local personnel to manage, operate, service and use the program	Training	Configuration N	Configuration M	Configuration M	Configuration N	Configuration M	Configuration M	Configuration M
	To build familiarity with the program	Trial	Configuration K	Configuration H	Configuration H	Configuration H	Configuration H	Configuration H	Configuration H
	To fit the characteristics of the program to the characteristics of the adopting institutions	Installation	Configuration K	Configuration H	Configuration H	Configuration H	Configuration H	Configuration H	Configuration H
	To assimilate the program as an integral component of the system	Institutionalisation	Configuration K	Configuration H	Configuration H	Configuration H	Configuration H	Configuration H	Configuration H

NOTE 1. KEY TO COLLABORATIVE RELATIONSHIPS BETWEEN ORGANISATIONS

Configuration A	CDC performs administrative, interface and technical roles
Configuration B	CDC performs administrative and interface roles but collaborates with EPIE on the technical role
Configuration C	CDC performs the administrative role but collaborates with EPIE on the interface and technical roles
Configuration D	CDC and EPIE collaborate on administrative, interface and technical roles
Configuration E	ASCIS performs administrative, interface and technical roles
Configuration F	ASCIS performs administrative and interface roles but collaborates with EPIE on the technical role
Configuration G	ASCIS and EPIE perform administrative, interface and technical roles
Configuration H	CDC and ASCIS perform administrative, interface and technical roles
Configuration I	CDC and ASCIS perform administrative and interface roles but collaborate with EPIE on the technical role
Configuration J	CDC and ASCIS perform the administrative role but collaborate with EPIE on the interface and technical roles
Configuration K	CDC, ASCIS and EPIE collaborate on administrative, interface and technical roles
Configuration L	CDC and ASCIS perform the administrative and interface roles but collaborate with EPIE and CEIMA on the technical role
Configuration M	CDC and ASCIS perform the administrative role but collaborate with EPIE and CEIMA on the interface and technical roles
Configuration N	CDC, ASCIS EPIE and CEIMA collaborate on the administrative, interface and technical roles

Figure 3 illustrates the application of the planned change model for structuring decisions in the prospective program. An action plan for the prospective program is presented whereby the Curriculum Development Centre (CDC) will be able to structure decisions for its optimal procedural design. The plan illustrates a process whereby the CDC reviews existent research on the problem area, implements a set of recommendations and collaborates with the EPIE Institute to design, construct and assemble the plan for the prospective program. Then, the Australian Schools Catalogue Information Service (ASCIS), collaborating with the EPIE Institute, disseminates and demonstrates the plan for the prospective program to client groups and key audiences, and both the CDC and the ASCIS, together with the EPIE Institute and the CEIMA, train local personnel, trial, install, and institutionalise the prospective program in the Australian context.

Figure 4 illustrates the application of the planned change model for implementing and recycling decisions in the prospective program. The process chart depicting the optimal procedural design for the prospective program shows that both Australian and foreign educational organisations collaborate within the categories of the prospective program. The chart illustrates an array of collaborative relationships between the CDC, the ASCIS, the EPIE Institute and the CEIMA based upon assessments for each of the seven categories, matched against each of the subactivities within the process for implementing and recycling decisions for the optimal procedural design. Only for the category, Program Elements, is extensive collaborative relationships between the CDC, the ASCIS, the EPIE Institute, and also the CEIMA for the subactivity of training, assessed as presenting the optimal procedural design for implementing and recycling decisions in the prospective program. The category, Funding, is also assessed to require the establishment of collaborative relationships between the CDC and the EPIE Institute for the subactivities of research and invention, and between the Australian organisations, the EPIE Institute and the CEIMA for the subactivity of training. The formation of collaborative relationships between the Australian and foreign educational organisations is judged to be unnecessary to implement and recycle decisions for the remaining categories in the prospective program. In summary, it is judged that the optimal procedural design for implementing and recycling decisions in the prospective program requires that collaborative relationships be established between Australian and foreign educational organisations in a variety of configurations for the subactivities of research, invention and training.

5.3.4 The Discussion

The research problem is to establish the congruence between the relevant capabilities of the Australian educational organisations and the strategies that foreign educational organisations can employ to achieve the goals of the prospective program. This congruence is established within the process for implementing and recycling decisions in the prospective program by using the planned change model.

The findings of this study indicate that the Australian educational organisations would need to collaborate with the specified foreign educational organisations on all subactivities of the category, Program Elements, as well as all the remaining categories of the subactivities of research, invention and training to implement and recycle decisions in the optimal procedural design for the prospective program successfully.

One could postulate that either of two alternative procedural designs should have been accepted. Representing dichotomous types, it could be specified in the first case that the Australian educational organisations should implement and recycle the procedural design for

the prospective program without recourse to establishing cooperative relationships with foreign educational organisations, whilst in the second case it could be specified that the Australian educational organisations should establish collaborative relationships with foreign educational organisations to implement and recycle activities for each category of the prospective program. Both of these alternative types of procedural design are rejected. The first is rejected because it was identified through the context evaluation that the responsible Australian educational organisations do not maintain the capabilities for research, invention and training to implement and recycle the activities of the prospective program successfully. The second is rejected for several practical reasons: the foreign educational organisations do not seem to possess the capabilities to extend collaboative relationships to the extent necessary to facilitate this type; the financial costs of this type are more likely to be prohibitive; and the benefits of more extensive collaborative relationships presented by this type are difficult to assess.

5.4 Conclusion

The input evaluation presented in this chapter has been accomplished in three stages: firstly, the relevant capabilities of the two Australian agencies, which are likely to adopt the prospective program, have been assessed through use of the planned change model; secondly, the strategies which three foreign educational organisations might employ to achieve the goals of the prospective program are assessed through the use of policy implications analysis; and thirdly, a design for implementing the strategies of the prospective program has been determined through establishing a congruence between the findings of the previous two stages. Stufflebeam et al. (1971b: 87) have drawn attention to the need for evaluators, who apply the planned change model in neomobilistic settings, to obtain and apply an extensive amount of information about the process and products of these change steps, and to co-ordinate the activities of many agencies over a long duration to accomplish very difficult, complex and little understood tasks. This assessment concurs with a sound judgment on the scope of the optimal procedural design identified in the input evaluation. It calls for a collaborative arrangement between the participating agencies, in which the EPIE Institute and to a lesser extent the CEIMA, should assume primary responsibility for the subactivities of research, invention and training within the prospective program, at least during the period of execution of the change strategy. The two Australian agencies, together with EPIE Institute, would co-operate in the subactivities of design, construction, assembly, dissemination, demonstration, trial, installation, and institutionalisation. Because it has been identified that the neomobilistic setting, in which the prospective program is to be planned, structured, implemented and recycled involves large change being attempted in the face of low understanding by Australian educators about how to accomplish the change, the role of foreign organisations is likely to be critical for the program's success.

The theoretical model presented in this chapter, however, cannot be substituted for the firsthand experiences of participation. Komoski, reflecting upon fifteen years of personal experience in planning, structuring, implementing and recycling the research, development, diffusion and adoption activities within the EPIE Institute, recalled the complexity of conducting these tasks within a neomobilistic setting in the following statement.

> "Evidence to this fact is that in 1967, with the help of Bob Stake and Terry Denny, and contributions by others like Jack Easely, Irving Morrissett, Ira Gordon, Fred Goodman, Maury Eash, Harriet Talmage, and Mike Scriven, I started on what, at times, seems to be something akin to an eternal quest and at other times is more like a masochistic exercise. This exercise is known to the school

consumers it is designed to serve as the Educational Products Information Exchange Institute; more commonly known as EPIE ("EPPY").

Whatever else it is, EPIE has been, and continues to be, an exercise in paradigm building that is continuously being shaped by the real world of instructional materials evaluation (the core of which is, for better or worse, textbook evaluation). And if this evolving paradigm has validity, it may come from the fact that its tangible output in the form of independently researched information on textbooks and other instructional artifacts is valued enough by the people who evaluate and purchase textbooks to sustain its existence from year to year. This exercise in real world product evaluation has been - and continues to be - a bit like the proverbial 'building the bicycle while riding it'.

More accurately, it is very much an adaptive, evolutionary response to certain technological and ecological facts of educational and economic life in the twentieth century."

(Komoski, P.K., 1982, *Affecting the System through Productive Evaluation*, Paper presented at the annual meeting of the American Educational Research Association, March 19-23, New York, 1)

CHAPTER 6

THE SELECTION OF A MODEL FOR INSTRUCTIONAL DESIGN ANALYSIS

A second component of input to be considered now is the adoption of a model of instructional design analysis that may be appropriate to the Australian context. The intent in this chapter is to make this selection through examination of the range of such models and evaluative instruments available. The researcher endeavours to investigate this issue through consideration of two problems: firstly, whether the techniques of instructional design analysis and their sequence in practice possess generic characteristics universal to the eductional setting; and secondly, whether evidence can be determined on the adaptability of the techniques of instructional design analysis in a variety of geographical contexts.

6.1 The Techiques and their Universality

Komoski (1977) has developed a schema of the materials' marketplace in order to illustrate the various stages of evaluation through which a material proceeds between its development and its use by students. Komoski (1985) recalled the development of this schema, as follows.

> "Unfortunately, those ultimate consumers - teachers and students - have no easy means of communicating to publishers and even their own districts that those materials are not as good as they need to be. As a textbook salesman said to me some years ago, 'the reason for it is simple: the kids don't buy the books.'
>
> That pithy analysis has always struck me as such an accurate assessment of the overriding reality of the instructional materials' marketplace that after hearing it I decided to develop a schema of the marketplace (Komoski, 1977). I began by asking: if the marketplace doesn't place its highest value on making sure that the products being developed and purchased are meeting the needs of the consumer, what competing factors are given a higher value? The result of my analysis was the *Schema of the Materials' Marketplace* (Figure 1). Clearly any such schema will miss some of the subtleties of the real world. But many persons involved in that marketplace have indicated that this schema is both valid and useful."
>
> (Komoski, P.K., 1985, 'Instructional Materials will not Improve until We change the System', *Educational Leadership*, 42: 7, 33).

This schema consists of five characteristics: marketplace setting; predominant values; 'evaluators'; evaluative criteria; and evaluative feedback. Five stages, also identified, allow for construction of a matrix to describe attributes. The attributes described at each stage can then be used to determine the fundamental evaluative procedures occurring between a product's development and its use with learners.

The typology of the evaluative process identified by the researcher, through administering the measurement instrument to assess the application of techniques in the Tasmanian context, consists of five sequential stages: learner-based verification and revision, incorporating both formative (pilot-trial and pilot-test) and summative (field-trial and field-tests) evaluations, for product development; screening for product adoption; descriptive analysis and evaluation for product assessment; decision making for product selection; and decision-making for product implementation. The stages of the researcher's measurement instrument possess similarities to certain attributes of Komoski's schema. The similarities are identifiable, particularly in relation to the four stages of Komoski's characteristic, the 'evaluators': developers/producers; screeners/adopters; selectors/prescribers; and users/learners. The similarities pertain to both the traits of each technique and the sequence in which the techniques are applied.

It is predicted, therefore, that these techniques exhibit inherent traits irrespective of the particular contexts in the educational setting in which they are applied. In order to confirm this hypothesis, the traits of each of the five techniques are examined briefly as they have been identified in exemplary practices or described by researchers.

The definition of the procedures, involved in applying techniques to provide learner-based verification and revision, has been exemplified best in the work of Brickell and Aslanian (1979). Building upon research conducted at the Southwest Educational Development Laboratory, Austin, Texas, they identified six techniques that can be applied to verify products at the stage of development: inspection; simulation; pilot-trial; pilot-test; field-trial; and field-test. As described by Brickell and Aslanian, each technique exhibits a set of traits to verify the development of educational products. The traits of each technique appear to be governed by three variables: the degree of complexity of the traits correlates with the stage of product development at which a technique is applied; the complexity of the traits correlates with the power of a technique; and the representativeness of sampling procedures correlates with the power of a technique.

The universal application to the educational context of techniques for learner-based verification and revision is implied in the work of Brickell and Aslanian. The policies and the practices for learner-based verification and revision of instructional materials enacted by various state legislatures in the United States provides the evidence to verify the universality of these techniques. The issues of the controversy regarding learner-based verification, however, have not pertained to whether the techniques possess generic properties. Klein (1978) maintains that these issues centre upon the types of materials to which learner-based verification and revision should be applied, the appropriateness of methods of collecting and reporting data, and the determination of a relationship between learner-based verification and revision and quality in instructional materials.

Similarly, criteria for screening instructional materials for adoption have been defined by a number of national and state organisations in the United States, in particular, the American Library Association and the Association of American Publishers. Whilst there is extensive evidence of the ineffectual applications of criteria to screen instructional materials, there is little evidence to verify the generalisability of such criteria.

The last three stages of the researcher's measurement instrument are based upon the functions of instructional design analysis - descriptive analysis, evaluation, and decision-making - described by Eraut et. al. (1975). Through comparative analysis of seven instruments, Eraut et. al. determined that each instrument includes a range, if not all, of these functions. This finding suggests that these functions, or techniques, possess universal applicability to the educational setting.

In conclusion, the consistency in descriptions reported on both the traits of the techniques and the sequence of their application suggests that these patterns may indeed be universal to the educational setting. This is represented by the apparent similarities between Komoski's sch :ma of the materials' marketplace and the researcher's more restrictive typology presented in the measurement instrument. Although it is not possible to provide empirical evidence to support this effect, these findings suggest that both the traits of each technique and the sequence of their application possess generic characteristics.

6.2 The Models of Curriculum Development

Two fundamental and contrasting models of curriculum development are indicated in the literature: the objectives model; and approaches that are opposed to the objectives model (Stenhouse, 1975; Lawton et al., 1978; Brady, 1983). To clarify discussion on the application of these models to instructional design analysis, each model is briefly discussed below.

The objectives model has been of foremost importance to curriculum development since Tyler (1949) provided its first systematic account. The objectives model presumes four broad principles: stating objectives; selecting learning experiences; organising learning experiences; and evaluation. The initial stage, stating objectives, from which the process of systematic curriculum development occurs, received detailed attention in a taxonomy of objectives for the cognitive domain by Bloom et al. (1956), and a taxonomy of objectives for the affective domain by Krathwohl et al. (1964). In contrast to this refinement of objectives, Taba (1962) provided the principal statement relating these principles to the practice of curriculum development through eight sequential steps: diagnosing needs; formulating objectives; selecting content; organising content; selecting learning experiences; organising learning experiences; evaluating; and checking for balance and sequence.

Two main types of criticism have been levelled by curriculum theorists at the objectives model: criticism of the objectives model in toto; and criticism of specific aspects of the objectives model. This criticism has led curriculum theorists to postulate alternative approaches to curriculum development. Whereas Tyler emphasised the specification of objectives, such a sequential ordering of steps in curriculum planning is not recognised in these other approaches. Two main approaches might be said to support the latter principle: the process model; and the interactive model.

Advocates of the process model stress that there should be no initial statement of objectives; greater emphasis should be placed upon methodology than content; both content and methodology are intrinsically valuable; and that evaluation should serve as a means to establish the worth of outcomes rather than to measure prespecified objectives. Peters (1956), first suggested the foundations for the process model by insisting that areas of knowledge in curriculum activities are intrinsic parts of the curriculum rather than means to ends, as they are treated in the objectives model. Stenhouse stressed that the process model is more appropriate to curricular areas which centre on knowledge and understanding whilst, at the same time, insisting that the objectives model is more appropriate to areas which emphasise information and skills.

In the process model, it is presumed that a series of significant questions about a program must be discerned and answered, as it progresses. Stenhouse has provided principles upon which such questions should be established: four principles of planning which comprise selection of content, development of a teaching strategy, decisions on sequence, and diagnosis of student strengths and weaknesses, including applying the three preceding principles to individual cases; four principles of empirical study which comprise study of student progress, study of

teacher progress, establishing the feasibility of implementing the curriculum in different school contexts, learner contexts, environments and peer group situations, and providing information and explanation on the variability of effects in differing contexts and on different students; and one principle related to justification, the formulation of the intention or aim of the curriculum, which is open to scrutiny.

Unlike the objectives model, a sequence between the different elements of the curriculum is not presumed in the interactive model. Brady (1983) contrasted the interactive model to the objectives model. Whereas the sequential ordering of the elements of the curriculum are presumed within the objectives model, the curriculum is viewed in the interactive model as a dynamic process between the elements, in which no element predominates. It is assumed, however, that changes to one curriculum element will affect the other elements. Curriculum development can commence with any one of the four curriculum elements, and curriculum developers are not restricted in when and how they develop or modify the elements.

6.2.1 The Adaptability of the Models to Different Contexts

The intention now is to examine the instruments used to evaluate curriculum materials and how they have been adapted to this purpose in different geographical contexts. Two instruments have had a predominant influence upon the evaluation of curriculum materials: firstly, the instrument developed by Eash; and secondly, the *Curriculum Materials Analysis System* developed by the Social Science Education Consortium. Tyler's objectives model of curriculum development is applied to instructional design analysis in both instruments.

6.2.1.1 The Development of Eash's Instrument

Eash (1972a) reported that the Office of Evaluation Research at the University of Illinois at Chicago Circle, working with the EPIE Institute, developed an instrument to evaluate curriculum materials during the late 1960's and early 1970's. First described by Eash (1970; 1972b), this instrument consists of five parts: I Objectives; II Organisation of the Material (scope and sequence); III Methodology; IV Evaluation; and V Comment. Three types of scale are employed in this instrument: firstly, a checklist is used to evaluate the characteristics of each construct; secondly, open-ended responses are used to analyse exceptions to these characteristics descriptively; and thirdly, judgements of each construct are rendered on seven-point, graphic rating scales.

Subsequently, Eash (1974) reported that this instrument was field-tested during its development with a group of twenty-five graduate students. The purpose of this pilot study was to determine inter-rater reliability. The subjects used this instrument to analyse two types of material under three conditions: firstly, each subject analysed a sixth-grade reading package, individually; secondly, the subjects, grouped in seven teams, rated the same material collectively; and thirdly, the seven teams then rated a curriculum bulletin on seventh-grade science collectively. The results indicated that, whilst the inter-rater reliability of each construct in the instrument exceeded .9, the inter-item reliability for each construct averaged .55.

It has been mentioned earlier in this report that the instrument developed by Eash was adapted subsequently by the EPIE Institute. Elliott (1985) has reported on the circumstances that led to this adaptation, and the nature of successive adaptations of the instrument by the EPIE Institute, as follows.

> "I can, however, throw some light on the transition between Eash's original instrument and the version of EPIE form A which you found outlined in EPIE Reports 73 and 74 - probably the most important transition in the development of EPIE form A and all that followed from it. This crucial revision took place during a workshop in which Maury Eash was training school people in Califor-

nia to use his instrument (which EPIE had adopted) to analyse textbook programs in reading. As a direct result of feedback from participants in that workshop, the first version of EPIE form A was produced.

The main problem involved in responding to your request is that the evolution of the process EPIE uses to analyse instructional materials is not documented except in successive revisions of our analysis instrument (once called EPIE form A) and indirectly in the introductions to the EPIE Reports. EPIE form A and its more recent descendants have been used primarily for gathering information to be used by educational consumers rather than for research. While we have made revisions in our analysis format in response to feedback from educators who use our reports, we have not kept systematic records of all the changes made and the reasons for them."

Because Eash's instrument has been revised on successive occasions by the EPIE Institute to take account of the criticisms of educators, the EPIE instrument has evolved from Eash's instrument substantially in specific details. Eraut et al. have described Eash's instrument as being essentially evaluative, although combining evaluative and descriptive analytic functions in a limited way but failing to provide users with decision-making information. The EPIE versions of this instrument have evolved to include a balance between each of the three functions - descriptive analysis, evaluation, and decision-making - so that users in a wide variety of American educational contexts are provided with information to select instructional materials that meet their particular local requirements and conditions.

The substance of this evolutionary process can be conceived more readily, if the circumstances of the adoption of an EPIE version of Eash's instrument are described as they have occurred in a foreign context. Extension of the services of the EPIE Institute to the Canadian provinces of Alberta, Manitoba and British Columbia has led three departments of education in these provinces to form a collaborative organisation, the Canadian Exchange for Instructional Materials Analysis (CEIMA). The ways that the CEIMA has adapted the method, the techniques and the practices of the EPIE Institute to suit Canadian conditions and requirements is discussed in the next section.

6.2.1.1.1 The Canadian Exchange for Instructional Materials Analysis (CEIMA)

The development of a system to evaluate curriculum materials by three education departments of the western provinces of Canada has been widely reported (Wood, 1981; Wright 1983; and Syme, 1987). This development occurred, initially, as a result of membership with the EPIE Institute and, more recently, through a co-operative venture between the three education departments, known as the Canadian Exchange for Instructional Materials Analysis (CEIMA).

The need for a procedure to evaluate curriculum materials to support curriculum development was recognised by Canadian provincial educational authorities in Manitoba, Alberta and British Columbia during the late 1970's. This need led to contact being made with the EPIE Institute, to which membership by subscription was then established, firstly by Alberta Education in 1978, followed by Manitoba Education in 1979 and the Ministry of Education, British Columbia in 1980. As a result of this membership, the EPIE Institute trained Canadian education department personnel to become trainers of evaluators, provided a certification procedure and a bank of analyses, based upon the EPIE PRO/FILES.

The procedure and process, adopted by the Canadian education departments to evaluate curriculum materials during the period of their membership with the EPIE Institute, were similar to those used by the EPIE Institute. Wright recounted that development of this procedure in British Columbia was initiated at first during 1978 through the establishment of a Management Committee by the Curriculum Development Branch. Then, materials selection committees were established during 1979, publishers were provided with guidelines during 1980 for tendering proposals on the development of materials so that this innovative procedure

for adopting curriculum materials first fully came into practice during 1981. Wood reported that two evaluators, trained and certificated in the process, analysed each material using EPIE form A. A third person then synthesised the reports of the two analysts. Selection decisions, made by committees or departmental personnel, then followed.

Syme has reported on the developments that led to the dissolution of the membership of the Canadian education departments with the EPIE Institute, as follows.

> "Over a period of approximately five years, we observed the EPIE instructional design instrument moving away from a descriptive format to a more evaluative one. The Canadian members also found that we were more interested in our analyses than those that were done in the United States. The three Provinces agreed to approach EPIE about withdrawing from the organisation and maintaining a more comprehensive and descriptive analysis of our own. EPIE agreed to this departure and the CEIMA (Canadian Exchange for Instructional Materials Analysis) began."

This development was realised when British Columbia withdrew from membership of the EPIE Institute during 1982, followed by Alberta and Manitoba during 1983. The Canadian Exchange for Instructional Materials Analysis was formed by the three provinces at a joint meeting in January 1983. The formation of CEIMA had consequences that were more far-reaching than just the severance of membership and contact with the EPIE Institute. Commencing at this time, the education departments of the three provinces extended through CEIMA the organisational procedure for evaluating and selecting curriculum materials and adapted the instrument, which had been derived from the EPIE Institute.

The adaptations to the instrument, originally derived from the EPIE Institute's version of EPIE form A used during the 1970's, were made to meet two requirements: to restrict instructional design analysis mainly to a descriptive analytic function; and, in certain circumstances, to include extensive, but independently, determined descriptive analyses of readability and social considerations. The instrument currently used by the Canadian Exchange for Instructional Materials Analysis (1987) for instructional design analysis consists of six main parts: 1. Identification and Background; 2. Instructional Design Constructs (Intents - developer's rationale, learner goals, learner objectives, intents congruence - Contents - organisation, presentation, scope, extent of the content coverage, sequence, supporting materials, contents congruence - Methodology - presentation, characteristics of methodology, instructional model, teacher preparation, teacher training, methodology congruence - Means of Evaluation - presentation, purposes/functions, content/focus, means of evaluation congruence); 3. Other Considerations (Accuracy of Content, Currentness of Content, Balance/Bias of Content); 4. Instructional Design Congruence (Internal Congruence, External Congruence); 5. Readability Factors (Sentence Structure and Vocabulary, Idea Load) and 6. Production Factors (Product Development, Technical Considerations for A.V. Components, Packaging, Media Appropriateness, Analyst's Summary). Because this instrument is used by each of the three education departments, analyses can be shared by all members of CEIMA through a bank of analyses.

Syme has suggested that the differences in the functions of descriptive analysis, evaluation and decision-making that have arisen between the approach used in Canada and that used by the EPIE Institute, have occurred because the evaluative function, as well as the decision-making function, has been largely encompassed in the roles of selection committees. Selections of materials made by selection committees are recommended to education departments for approval.

6.2.1.1.1.1 Manitoba Education

The details of the organisational procedure used in Manitoba have been published by Manitoba Education (1988). This document consists of three sections: procedures for the selection of

approved learning materials; continuing evaluation of new instructional materials; and guidelines for identifying bias in learning materials. Presented in the first section, the organisational procedure for the evaluation of curriculum materials in Manitoba consists of three stages: identification and screening; in-depth analysis (instructional design analysis); and selection for piloting or recommendation.

Certain basic requirements are applied by the Curriculum Development and Implementation Branch, Manitoba Education to conduct this organisational procedure: publishers are informed by a learning materials consultant that their publications must comply with the procedures; materials selection sub-committees are appointed to conduct the three stages of the procedure; and all materials selection sub-committee members, consultants and other resource personnel must qualify as certified analysts of learning materials through a training program provided by the Curriculum Development and Implementation Branch.

Materials are screened for adoption by materials selection sub-committees, which are established for each subject area. Materials are screened by appraisal forms on criteria that relate to their sources, appropriateness to student groupings, potential for curriculum match, balance in presentations of attitudes, and balanced reflections of the Canadian multicultural heritage. Instructional materials are screened into three categories: unsuitable submissions, which are rejected; submissions judged to be basic to the curriculum, which are subjected to in-depth analyses; and submissions judged to be supplementary, which are subjected to an extensive reviews and curriculum matches. Two independent analysts apply the instrument used by the CEIMA for instructional design analysis to conduct in-depth analysis of each basic curriculum material. Then a synthesis of both analyses is produced and the reading level analysed. At the third stage, the materials selection sub-committees match the synthesis of each basic curriculum material to the curriculum guide on seven criteria: whether it is student-oriented; whether its focus is Canadian; whether it presents different approaches or levels of sophistication; whether it serves a variety of functions on an inter-disciplinary basis; whether it meets specific needs; whether it reflects the variety of Manitoba's ethnic groups; and whether it reflects inquiry-oriented methods. Selection leads to the basic curriculum material being recommended for either final approval or pilot study. A supplementary material is selected on whether it is both cost-effective and not expendable. Once a material is approved, information on the in-depth analysis is provided to schools to assist their selection processes. Approved materials are retained on an approval list for three years. A procedure is applied to add or to remove materials on the approval list. Additions are made by presenting to publishers requests for submissions on a three-year cycle: language arts and social studies in the first year; mathematics and science in the second year; and other subjects in the third year.

Analysts are required to apply guidelines for identifying bias in learning materials under two main categories: historical accuracy and balance; and comprehensiveness and unity. The former category is concerned with inclusiveness and concreteness, and the latter category is concerned with language and realism of references to race, religion, sex, age, physical and mental capacities of portrayals in instructional materials.

6.2.1.1.1.2 Ministry of Education, Province of British Columbia

The organisational procedure used in British Columbia consists of three stages: instructional design analysis; curriculum match; and field-testing. Prior to the first stage, publishers submit their publications upon request to the Curriculum Development Branch. Instructional materials submitted by publishers are screened for adoption. Then, a coordinator of learning resources arranges for those prescribed and authorised materials adopted to be analysed for instructional design, readability, and social considerations by teachers who have qualified as

certified analysts in a training program conducted by the Curriculum Development Branch. Curriculum match is applied by curriculum committees to select instructional materials on the basis of certain guidelines: a preference is specified for materials developed at sources in British Columbia; minimum standards are specified for instructional design, readability and social considerations; and a preference is specified for non-consumable materials. Alternative guidelines are specified for matching materials developed in other Canadian provinces or at foreign sources. Those basic curriculum materials selected are recorded by the coordinator of learning resources and recommended for either field-testing or are approved by the Ministry of Education. French materials are field-tested at the provincial level whilst materials in other subject areas are field-tested at a local level. Once basic curriculum materials are approved, an official list is sent to schools annually as the Prescribed and Authorized Learning Resources Catalogue, whilst analytic information is published in a Product Information booklet. Supplementary materials are listed in curriculum guides, included in resource books, and in the media resource guides and catalogue of the Provincial Educational Media Centre (PEMC). The details of this organisational procedure have been published by the Ministry of Education, Province of British Columbia (1987). This document consists of three parts: learning resources - definitions, status, distribution, submission procedures, selection procedures for prescribed and authorised learning resources, print learning resources developed under contract, selection procedures for print learning resources developed by other ministries and independent agencies, notification procedures for recommended supplementary; curriculum committees - curriculum committee membership, definition of responsibilities, and terms of reference; and an appendix.

To assist different groups, such as evaluators and selection committee members, the Ministry of Education, Province of British Columbia (1982), has published a booklet to guide users in interpreting detailed analyses. This booklet consists of five chapters - an introduction, curriculum design, readability, social considerations, and a conclusion - and four appendices - glossary of terms (CEIMA), glossary of terms (readability), Ministry guidelines for selection, and subject areas.

The Ministry of Education, Province of British Columbia (1983) has also published a booklet to assist publishers. This booklet consists of four chapters - an overview of the materials selection process, instructional design, readability, social considerations - and four appendices - Herber's levels of comprehension, glossary of terms (instructional design), glossary of terms (readability), and Ministry guidelines for selection.

In addition to instructional design analysis, the Ministry of Education, Province of British Columbia has developed instruments to analyse readability and social considerations. These evaluations are done separately from the instructional design analysis.

Readability analysis is undertaken to match the reading level of a learner to instructional materials of an appropriate readability level. An evaluator uses the instrument to apply two measures of readability: firstly, surface measures, which identify the physical features of the written material that contribute to its ease or difficulty for reading, together with its appearance of ease or difficulty; and secondly, deep measures, which identify syntactic and semantic features of the written content. The instrument developed for readability analysis by the Ministry of Education, Province of British Columbia (1981a) comprises three main parts: 1. Identification and Background; 2. Surface Measures (Physical Features, Readability Formula Computations and Summary Statements); and 3. Deep Measures (Content Considerations - idea load, text style and structure, vocabulary load, and sentence structure and vocabulary - and Reading Purposes and Application - reading purposes). On the basis of this analysis, the

summary requires the evaluator to judge accordingly, the range of the grade level placement, student entry competencies and instructional setting.

Social considerations analysis is undertaken to provide selection committees with descriptive analyses of balanced portrayals, as well as biases, in curriculum materials. These include considerations of language usage, role portrayals of the sexes, belief systems, violence, sexual references, age portrayals, and any special considerations. In completing a social considerations analysis, an evaluator is invited to consider the author's tone, errors of omission, extent of references, frequency of occurrence, and setting of both the text and visual inclusions of the material in completing a descriptive analysis. The instrument developed for social considerations analysis by the Ministry of Education, Province of British Columbia (1981b) comprises three parts: 1. Identification and Background; 2. Components of Social Considerations (Language Usage, Ethnic References, Role Portrayals of the Sexes, Reference to Belief Systems - religion, cults, philosophies, political views - Reference to Violence, Sexual References, Age Portrayals, References to Social Class, and Other Considerations); and 3. Analyst's Summary. The extensive nature of the social considerations analysis has been indicated by Syme, who stated that the text must be read in its entirity by the evaluator.

Finally, Syme has indicated that attention is being given at present to the provision of analyses of audio-visual materials and computer courseware.

> "Analysis of non-print materials in British Columbia is carried out by the Provincial Educational Media Centre. In the past, audio-visual materials and computer software have not been seen as integral to curriculum, but as supplementary elements. Currently, this focus is changing and we are working with PEMC to develop an analysis format for software and video which parallels the CEIMA format used for print resources and builds in the Social Considerations and Readability considerations of our other analyses".

6.2.1.2 The Curriculum Materials Analysis System

Whereas Eash's instrument has been adapted to varying requirements and conditions in the educational context, the *Curriculum Materials Analysis System*, developed by the Social Science Education Consortium, has not been adapted to meet the needs of other educational contexts. Rather, the *Curriculum Materials Analysis System* has provided the catalysis in another context to develop an evaluative instrument that applies an alternative approach to curriculum development. This development, which occurred during the conduct of a significant project on the evaluation of curriculum materials, is now related.

6.2.1.2.1 Education Area, University of Sussex

Between 1973 and 1975, the Centre for Educational Technology, Sussex University, Falmer, Brighton, Sussex, England, conducted a project, funded by the Volkswagen Foundation, to examine the evaluation of curriculum materials. The activities of the project, reported by Eraut et al. (1975), consisted of reading and consultation at an international level, producing analyses of different materials, developing a general analysis scheme, conducting an instructional program in instructional design analysis and one-week workshops on the evaluation of curriculum materials.

Eraut et al. offered two reasons for adopting an international focus: first, to draw on the experiences of experts in curriculum development and instructional design analysis in other countries; and second, to support a belief that instructional design analysis is a significant means for communicating curriculum ideas at an international level. This would relate, they hoped, to the development of an approach which would be acceptable and usable internationally for evaluating both contextually-specific and culturally-specific instructional materials without imposing nationally-biased criteria.

This focus was applied in two of the four decisions which influenced the direction of this project: firstly, a decision was made to restrict the project to the evaluation of instructional materials; secondly, a decision was made to adopt an evaluative instrument; thirdly, a decision was made to develop a generic instrument; and fourthly, a focus on decision-making was directed at a subject or content area level. In the context of this discussion, the application of an international focus is of greatest importance for the second and third decisions.

Eraut et al. indicate that they had had considerable experience in using the *Curriculum Materials Analysis System* developed by the Social Science Education Consortium to conduct analyses of curriculum materials, and had extended the application of this instrument to subjects other than social studies. Dissatisfaction with the *Curriculum Materials Analysis System* was partly responsible for the decision to develop their own instrument, titled the Sussex Scheme, which consists of five parts: 1. Introduction; 2. Description and Analysis of Materials; 3. The Materials in Use; 4. Evaluation; and 5. Decision Making in a Specific Context, an optional part.

A characteristic feature of the Sussex Scheme is the developers' recommendation of a particular curriculum model without incorporating it within the instrument, so that its use is not mandatory and can be substituted by other curriculum models. In the interactive model recommended for curriculum development, the aims of a curriculum program or material are expressed through four elements, none of which takes precedence, but operate through dynamic interaction: subject matter; objectives and outcomes; teaching, learning and communication methods; and assessment pattern. The developers argue that this allows a four-stage approach within part 2 and part 3 of the Sussex Scheme to be adopted. This allows for explicit and realistic relationships to occur between author, analyst and user.

Eraut et al. identified three essential functions of instruments used to evaluate curriculum materials: descriptive analysis; evaluation; and decision-making. This instrument employs a separate evaluative function relating intents to differing standards and judgments so that the analyst is expected to express arguments both in support and in opposition to a curriculum program or material. Unlike the *Curriculum Materials Analysis System*, the process for selecting curriculum materials is an integral function of the instrument developed by this project group. The developers of the Sussex Scheme adopt both selection and implementation decisions within the decision-making function so that users are presented with pertinent evaluations of curriculum materials rather than compelling them to select materials to fit a particular curriculum design chosen beforehand.

They indicate that one of the main purposes of their instrument, the Sussex Scheme, is to provide selection evidence which will allow those considering purchase or use of curriculum materials to adopt, to adapt or to reject them. They argue that selectors should be presented with analyses of curriculum materials rather than being forced to decide upon the nature of the curriculum beforehand. Because selection is so closely linked to implementation, these writers believe that the last, optional section of their instrument, Decision Making in a Specific Context, should only be completed by a member of the user group.

The current applications of the Sussex Scheme appear not to be documented. At the researcher's request, Sigurgeirsson interviewed Eraut (1988) on the current applications of the Sussex Scheme, both in Britain and in other countries. The substance of this interview is reported in an edited form, as follows.

> "As far as I am aware, the Sussex Scheme has not been used by any official agency in Britain. However, it is being used in a number of places: in the third or fourth year of B.Ed. courses; in certificates for professional studies (in-service); and in the M.A. in curriculum studies at the London Institute of Education and elsewhere. It is also built into one of the Open University courses on curriculum evaluation.

We continue to use it in M.A. courses at Sussex, sometimes with certain modifications. I run a one-week workshop for people working in schools, for people working in higher and further education, for a course we run for third-world educators, often from curriculum development centres.

Outside Britain, I have recently conducted training workshops in Singapore and China. In Singapore, I used it to train textbook reviewers and members of the Curriculum Development Institute of Singapore. In the People's Republic of China, I ran a training workshop last September for the People's Education Press. Since they publish about a billion textbooks a year and are currently in the process of revising them, the workshop was very timely. We had to work with interpreters, and also had a research student of ours from Hong Kong assisting. In the end we got some very useful results from it and I think they learned some useful things. We are in the process of getting the reports produced there translated from Chinese into English, as they provide a valuable resource of information about the nature of Chinese textbooks.

I am beginning to think about approaching the workshops using the Sussex Scheme in a slightly different way. In particular, I intend talking about different methods of analysis, their strengths and weaknesses, and inviting members of the workshop in the early stages to try out different methods on issues that they particularly want to investigate. Then, after they have gained some experience in trying different methods, to start working on the basis of the Scheme itself. By 'different methods', I mean both various kinds of quantitative analysis and also various qualitative approaches. One, for example, would be the quotation of an extract, followed by making a commentary on that extract. Another would be treating a typology and then giving qualitative examples to fit the typology."

Eraut (1988) has developed ten such methods for collecting evidence on criteria in curriculum materials: quantitative survey (distribution of content, frequency and type of exercise, teaching points per lesson, photographs/diagrams per chapter); map of concepts, teaching points (content structure); inspection (organising features, explanation of purposes); excerpts with critiques (presentation, language style); detailed discussion of examples (logical development); reference to sentences in text (inaccuracy, bias, design of exercises); other written sources (aims, alternative approaches, arguments on issues, theories); rating by experts (importance of topic, validity of interpretation); classroom trials or ratings by experienced teachers (motivation for pupils, effectiveness, suitability for homework); and teacher consultation (clarity of teachers' book).

6.2.1.2.1.1 The Implementation of the Sussex Scheme in China

Wu Yongxing (1988), Director of the Curriculum and Teaching Materials Research Institute, Beijing, People's Republic of China, has provided the following information on the workshop presented by Eraut at Beijing during September 1987, and on the prospective implementation of the Sussex Scheme in Chinese education. This statement is presented in an edited version below.

"Dr Michael Eraut ran a training workshop last September in the People's Education Press (PEP) and the Curriculum and Teaching Materials Research Institute (CTMRI). The participants are very much interested in the Sussex approach of teaching materials analysis. They learned the theory of the approach first and then analysed some teaching materials, such as textbooks for Chinese, mathematics, geography, physics and chemistry. They completed a 150-page report. Later, two articles that relate to the workshop were carried in our organisation's magazine, *Curriculum, Teaching Material and Method*, January of 1988. They find that the Sussex Scheme is scientific and practical in teaching material analysis.

In the next few years, we will be engaged ourselves in the development of teaching materials for the nine-year compulsory education level in the following order: 1988 - development of experimental teaching materials; 1989 - trial of the experimental teaching materials in local areas, then their revision and conduct of trial teaching again; 1990 - submission of the final version of the teaching materials for approval; and 1991 - application of the teaching materials on a national scale.

We are going to use all means available to assist our research and development of the teaching materials, including the Sussex Scheme. But at the moment, we do not have any concrete ideas and means for the application of the Sussex Scheme."

6.2.1.2.1.2 The Adaptation and the Implementation of the Sussex Scheme in Iceland

The Sussex Scheme is currently being implemented within the national education system of Iceland. This project is being conducted at present by Sigurgeirsson (1987) with support from the National Centre for Educational Materials at Reykjavik, Iceland.

Iceland is both geographically isolated from Europe and peopled by an ethnically homogeneous, Icelandic-speaking community of 245,000. The education system is also characteristed by its uniformity. This system is almost entirely operated by the State through the Ministry of Education. The 230 schools, which are distributed across eight local education authorities, operate at two levels: a primary level of nine grades (ages 7 to 15 years), and a secondary level of four grades (ages of 16 to 20 years).

Both the production and the dissemination of all curriculum materials, except those imported for the compulsory school level (K though to grade 9), are handled by the National Centre for Educational Materials, a governmental authority founded in 1979. The introduction of educational videotapes, the operation of a Teachers Centre and the development of curriculum materials are the major undertakings of the National Centre for Educational Materials.

The Sussex Scheme has been adapted for Icelandic use by Sigurgeirsson (1986a), who describes the process involved in the following terms.

> "The Sussex Scheme is then assessed with view to possible modifications: (1) by evaluating a curriculum analysis workshop where the Scheme was used, (2) by comparing it with recent literature, and (3) by using the Scheme when analysing English and Icelandic curriculum materials".
>
> (Sigurgeirsson, I. 1986a, Improving Curriculum Materials Development in Iceland through Curriculum Analysis, M.A. in Education thesis, University of Sussex, abstract)

Although the major sections are retained within the Sussex Scheme, a considerable number of criteria have been added in the Icelandic version.

The Icelandic version of the Sussex Scheme is being implemented through workshops conducted during 1987. It is anticipated that such workshops will provide the means to evaluate all curriculum materials currently used in Icelandic schools, the means to develop a critical understanding of significant issues for development of curriculum materials, the means to encourage a greater degree of evaluation of curriculum materials in Iceland, the means to prevent uncritical adoptions of foreign curriculum materials, the means to develop skills in evaluating curriculum materials through preservice and inservice teacher education, the means to foster the professional development of developers of curriculum materials, and the means to encourage educational organisations in Iceland to participate in such activities.

Concurrent with the implementation of the Icelandic version of the Sussex Scheme, Sigurgeirsson (1986b) is also conducting research during 1987 and 1988 into the use of instructional materials in a stratified sample of Icelandic schools at the grades 4 through 6 level. This research is designed to examine eight characteristics of instructional materials: their intrinsic characteristics; their patterns of use; their roles; their selection; perceived problems in their use; teachers' attitudes about their fundamental characteristics; their use by students; and students' attitudes about their fundamental characteristics. The research method is employing several techniques: observations of twenty classrooms in ten schools; the use of an interview schedule with teachers; and use of a quasi-experimental interview design with students.

6.3 Selection of a Model for the Australian Context

The discussions of two issues pertinent to the selection of a model for instructional design analysis have provided varying degrees of substantive evidence. The evidence suggests that the sequence in which these techniques are applied within an educational setting is governed by intrinsic factors of a universal type. Although this contention cannot be verified by empirical evidence, there is evidence that the methods, the techniques and the practices applied within this field of work can be adapted successfully in different geographical contexts.

The intention now is to examine issues concerning the selection of an appropriate model of instructional design analysis for use in the Australian context. Such a selection is governed by two sets of factors: those that pertain to the curriculum; and those that pertain to the availability of resources. The former factor is now discussed in detail.

Perhaps, Stenhouse (1975: 80-83) has provided the most convincing argument to guide the selection of the appropriate model of curriculum development. The gist of Stenhouse's argument centres on a pronouncement that the respective emphases placed upon either knowledge and understanding or information and skills should constitute the criterion for selecting a particular model. Stenhouse believed that when information and skills are more important, selection of the objectives model is appropriate and, on the other hand, when knowledge and understanding are more important, selection of the process model is appropriate.

The prospective program entails essentially the collection, the synthesis and the diffusion of information. Subsidiary objectives, such as those concerned with inservice staff development and teacher education entail training, whilst others, such as implementing methods, techniques and practices or initiating research entail, principally, imparting knowledge and understanding. It is conjectured, therefore, that it is appropriate to select Tyler's objectives model for application to the methods, the techniques and the practices of this field of work, because such work is overwhelmingly concerned with developing skills and providing information.

Selection of an appropriate model of curriculum development for Australian education must also be informed by other considerations. The background to these considerations relates to antecedent conditions, for instance, the geographic, demographic and sociocultural variables that influence Australian education. Australian society remains predominantly a European enclave, in spite of increasing influences impinging from eastern Asia. Although isolated from other major concentrations of European populations in Europe and North America, both British and American approaches to curriculum development have influenced Australian educators. It is only recently that an indigenous school of curriculum thought has formed in Australian educational circles, largely as a result of the foundation of the Curriculum Development Centre. Merging the prevailing British and American strands of curriculum thought into a pragmatic but eclectic approach, this school has sought through its foremost figure, Malcolm Skilbeck, to promote school-based curriculum development as an appropriate solution to many curriculum issues in contemporary Australian education.

In spite of a clearer focus on curriculum theory by specialists, it is apparent today that a concensus does not prevail among the range of Australian educators on matters of curriculum development. Furthermore, it is unclear whether evidence of their attitudes would be particularly helpful in informing decision-makers on this issue. This situation is manifest in the practices of Australian educators, who are generally unaccustomed to analysing the curriculum in terms of its component elements. Consideration of these factors, however, does not seem to be useful for guiding selection of the appropriate model of curriculum

development, except to inform decision-makers that there appears to be no consensus on the matter.

6.4 Conclusion

Evidence that decision-makers can use to choose a model of instructional design analysis, that is appropriate for the Australian context, remains inconclusive. The discussion presented in this chapter has shown that empirical conclusions cannot be made that verify the universal applicability of the methods, the techniques and the practices employed within this field of work.

On the other hand, the adaptation of these methods, techniques and practices in other geographical contexts has been verified through the examples presented in this chapter. Furthermore, it can be determined that approaches to related educational problems applied in other educational settings can be assimilated into the methods, the techniques and the practices applied in this field of work. For instance, the examination has shown that the EPIE Institute has adopted approaches, such as the Degrees of Reading Power and the principles of curriculum alignment, originally applied by other educational organisations. This evidence confirms that the methods, the techniques and the practices applied in this field of work can be adjusted to requirements in other geographical contexts.

The information on curriculum issues presented in this chapter would suggest informed judgement should support the selection of Tyler's objectives model of curriculum development. Such a choice would be conducive to Australian education adapting those significant systems available for collecting, synthesising and diffusing information on instructional materials.

CHAPTER 7

THE CONCLUSION

The purpose of this chapter is to present educational authorities with a set of recommendations for action in the problem area. The recommendations refer to existing methods, techniques and practices to collect, to synthesise and to disseminate information on instructional materials in the case of the context evaluation and to the design of a system that applies reliable and valid techniques to collect, to synthesise and to disseminate information on instructional materials in the case of the input evaluation. The recommendations are specified on eight criteria stated by Stufflebeam et al. (1971a): institutional capability; program elements; management; personnel; funding; schedule; facilities; and communication.

7.1 THE RECOMMENDATIONS

The evaluation of the Australian context has provided evidence indicating that educational authorities should focus attention upon the following priorities in the problem area.

The Context Evaluation

- Institutional Capability

Recommendation 1

The capability of national educational agencies, such as the Curriculum Development Centre (CDC) and the Australian Schools Catalogue Information Service (ASCIS), to plan, to structure, to implement and to recycle a common program to collect, to synthesise and to disseminate information on instructional materials should be assessed.

Recommendation 2

The capability of State education departments to contribute to the planning, structuring, implementing and recycling of a national program to collect, to synthesise and to disseminate information on instructional materials should be assessed.

- Program Elements

Recommendation 3

The methods, techniques and practices that are applied at present to analyse instructional materials by Australian educational authorities should be reviewed with the intent that more reliable and valid methods, techniques and practices are adopted.

Recommendation 4

The activities in existing programs to collect, to synthesise and to disseminate information on instructional materials, at both the national and the state levels, should be reviewed to identify duplicated services with the intent that services are rationalised.

Recommendation 5

The objectives and procedural designs of programs applied at present to collect, to analyse and to disseminate information on instructional materials by Australian educational authorities, should be reviewed.

Management

Recommendation 6

The qualifications and experiences of management staff working in the problem area should be assessed with the intent that such qualifications and experiences will meet, in future, criteria specified on the bases of requirements determined as essential in foreign settings.

Personnel

Recommendation 7

The qualifications and experiences of professional personnel working in the problem area should be assessed with the intent that such qualifications and experiences will meet, in future, criteria specified on the bases of requirements determined as essential in foreign settings.

Funding

Recommendation 8

The extent of the current budget in personnel, equipment and material, special services, travel, communications and space rental funded to collect, to synthesise and to disseminate information on instructional materials at both the national and state levels should be assessed.

Schedule

Recommendation 9

The appropriateness, sufficiency and economy of the schedule for programs to collect, to synthesise and to disseminate information on instructional materials at both the national and state levels of Australian education should be reviewed with the intention of improving these attributes.

Facilities

Recommendation 10

The appropriateness, sufficiency and economy of the facilities used in programs to collect, to synthesise and to disseminate information on instructional materials at both the national and state levels of Australian education should be reviewed with the intention of improving these attributes.

Communication

Recommendation 11

The procedures for both publicising programs among practitioners and affording practitioners the opportunity to examine and to assess the operating qualities of existing programs should be reviewed.

The Input Evaluation

The evaluation of input for planned change in the Australian context has provided evidence indicating that educational authorities should focus attention upon the following priorities in the problem area. In this regard, educational authorities should consider the prospective program, described in Chapter 4, as the preferential plan.

Institutional Capability

Recommendation 12

The Curriculum Development Centre (CDC) and the Australian Schools Catalogue Information Service (ASCIS) should collaborate to apply innovative methods, techniques and practices to collect, to synthesise and to disseminate information on instructional materials. Such collaboration is likely to strengthen the configuration between mission-program-component-products in internally shared activities.

Recommendation 13

The Curriculum Development Centre (CDC) and the Australian Schools Catalogue Information Service (ASCIS) should consult foreign organisations, such as the Educational Products Information Exchange (EPIE) Institute and the Canadian Exchange for Instructional Materials Analysis (CEIMA), on the nature of input and co-operation that these organisations can contribute towards strengthening the configuration between mission-program-component-products in both internally and externally shared activities.

Program Elements

Recommendation 14

The Curriculum Development Centre (CDC) and the Australian Schools Catalogue Information Service (ASCIS) should adopt the specified objectives and scope of the principal aim of the prospective program stated in Chapter 4.

Recommendation 15

The Curriculum Development Centre (CDC) should explicate objectives to facilitate the integration of the National Software Co-ordination Unit (NSCU) and the prospective program.

Recommendation 16

The Curriculum Development Centre (CDC) and the Australian Schools Catalogue Information Service (ASCIS) should consult foreign organisations on planning, structuring, implementing and recycling the objectives of the prospective program, especially with regard to research activities.

Management

Recommendation 17

The Curriculum Development Centre (CDC) and the Australian Schools Catalogue Information Service (ASCIS) should give attention to the selection of a staff which has the requisite qualifications and experiences to manage the prospective program.

Personnel

Recommendation 18

In collaboration with foreign organisations, the Curriculum Development Centre (CDC) and the Australian Schools Catalogue Information Service (ASCIS) should design and implement an in-service course to train personnel in the methods, techniques and practices to be applied in the collection, synthesis and dissemination of information on instructional materials.

Funding

Recommendation 19

The Curriculum Development Centre (CDC) and the Australian Schools Catalogue Information Service (ASCIS) should prepare a detailed budget for the prospective program, specifying the costs of personnel, equipment and materials, special services, travel, communications and space rental.

Schedule

Recommendation 20

The Curriculum Development Centre (CDC) and the Australian Schools Catalogue Information Service (ASCIS) should prepare a schedule that specifies appropriate, sufficient and economical means to plan, to structure, to implement and to recycle the research, development, diffusion and adoption activities of the prospective program.

Facilities

Recommendation 21

The Curriculum Development Centre (CDC) and the Australian Schools Catalogue Information Service (ASCIS) should assess the appropriateness, sufficiency and economy of their facilities for planning, structuring, implementing and recycling the research, development, diffusion and adoption activities of the prospective program.

Communications

Recommendation 22

The Australian Schools Catalogue Information Service (ASCIS) should design a plan to create widespread awareness of the prospective program among practitioners and to afford practitioners the opportunity to examine and to assess the operating qualities of the prospective program.

APPENDIX A

PAPER PRESENTED TO BOARD MEETING NO. 10 OF THE AUSTRALIAN SCHOOLS CATALOGUE INFORMATION SERVICE

SUBJECT: The evaluation of curriculum resources

A. With the advent of ACIN and similar education databases and with the proposed review service, ASCIS has clearly moved significantly from its initial 'cataloguing only' phase. This is not only an outcome of the ASCIS Corporate Plan but is a development warmly welcomed by the Australian education community. It can be expected that, in the relatively near future, bibliographic records without 'value added' data will be the exception rather than the rule.

B. ASCIS is clearly no longer concerned merely with the efficient organisation of curriculum resources, although that remains a fundamental thrust of its services. It has moved into the field of carrying, indeed even creating, evaluative statements about curriculum resources. It has thus begun a process by which it influences the selection and the use of curriculum resources.

C. The ASCIS enterprise of developing what is essentially a curriculum resources information database is driven by a conviction, not explicitly stated at least in these terms, that curriculum resources are a crucial component in the education process. By its quite proper inclusion of information about the content of curriculum resources in its database and its willingness for this information to be evaluative, ASCIS has declared that it has a role to play in the qualitative judgements which educators must make about the resources required for the development and realisation of curriculum in Australian schools. This role may be, indeed probably should be, chiefly that of a neutral communicator of such information. ASCIS has an interest, nevertheless, in attempting to ensure that such qualitative information is valuable to the schools it services.

D. Australian approaches to the evaluation of curriculum resources have to date been relatively unsophisticated in comparison with other countries, notably the United States and Canada. In a survey of past and present practice in Australia by Michael Watt (unpublished thesis), certain critical assessments are made which conform to the observations of practitioners in the field. Evaluations are frequently more descriptive than analytical. They tend to be made without explicit linkages to curriculum models, pedagogical theories, or even the likely relationship of the resources to objectives and outcomes in the classroom. Few evaluators have been trained for the task. The criteria for evaluation are not always explicit or discernible. Given ASCIS'

strategic interest in this matter as a carrier (or potential carrier) of evaluations, this criticism of Australian practice should be of concern to the ASCIS Board.

E. This paper does not argue that ASCIS should itself play a direct role in remedying the faults in Australian evaluation practice identified above. Such action would go beyond its charter. It is argued, however, that ASCIS is entitled, perhaps obliged, in the interests of its users to encourage some other body to investigate the quality of the process of evaluating curriculum resources and to remind that body of ASCIS' interest in and capacity to deliver quality evaluations to Australian schools and educators. It is suggested that CDC may be the appropriate body to which the matter may be referred.

F. The ASCIS Board is reminded that on two past occasions the writer has drawn attention to the American body, the Educational Products Information Exchange (EPIE) Institute. This Institute is extensively described in a research paper by Mr. Michael Watt of the Education Department of Tasmania. It has much experience and expertise in the development and use of criteria and instruments for the evaluation of curriculum resources. It also conducts training programs for educators in the principles and practice of curriculum resource evaluation. It also has a database of evaluations of all widely-used American curriculum resources, including computer software. In correspondence with Mr. Watt, the EPIE Institute has expressed an interest in working with Australian educators to address problems related to curriculum materials in Australian education. On this occasion and in light of this background paper, the Board may be willing to refer the matter to CDC. It would be for CDC to determine whether it was able and willing to open any negotiation with the EPIE Institute and to consult with Mr. Watt on his extensive background of research. The Board is merely asked to signal an interest in the matter and to seek to interest another body in pursuing it.

G. Recommendation

THAT ASCIS, because of its commitment and capacity to store and disseminate 'value added' data to schools, and because of its legitimate interest in including appropriate evaluations of curriculum resources in such data, and because of its conviction that current Australian procedures for the evaluation of curriculum resources could and should be improved, and because it is aware of overseas sources of expertise in such matters, notably the EPIE Institute in the United States, resolve to request CDC to consider inviting the EPIE Institute to conduct a workshop for Australian edaucators on the evaluation of curriculum resources, with the objective of improving Australian practice.

NOTE: If the Board were to adopt this resolution, a copy of this paper might well be included in the letter to CDC which conveys the request. The letter might also refer CDC to the work of Mr. Michael Watt on this subject. It would be up to CDC to decide whether or not to make contact with him.

Glenn C. Pullen
Tasmania

From Minutes of Board Meeting No. 10, p. 203

8.26.3 Evaluation of curriculum resources

Mr. Pullen tabled a paper suggesting the ASCIS Board request CDC to approach the Educational Products Information Exchange (EPIE) about conducting a workshop with a view to improving the Australian practice of evaluating curriculum resources.

It was moved (Bahnisch/Macdonald): that ASCIS, because of its commitment and capacity to store and disseminate 'value added' data to schools, and because of its legitimate interest in including appropriate evaluations of curriculum resources in such data, and because of its conviction that current Australian procedures could and should be improved, request CDC to conduct a workshop for Australian educators on the evaluation of curriculum resources, with the objective of improving Australian practice.

Motion carried 10.217

APPENDIX B

A FORM FOR RATING THE FUNCTIONS OF TECHNIQUES

INSTRUCTIONS:

Please follow the sequence of steps described below.

1. Please read an interview record of these functions as they are described for a particular site.
2. Please read each question in the order presented on the rating form.
3. Please write in your response for question 1 and question 2.
4. For each other question in Section 1 through to Section 6, tick the box that best represents the function you believe is used at the site described in the written document.

Section 1: Background Information

1. What is your name?

   .....

2. What is the name of the agency assessed?

   .....

3. To what type of material does this evaluation apply?
   (a) site-developed instructional material
   (b) site-developed educational equipment
   (c) commercially produced instructional material
   (d) commercially produced educational equipment

Section 2: Learner-based Verification and Revision

4. Does the process for product development include learner-based verification and revision?
   (a) yes
   (b) no

   If you ticked 'no', go on to Section 3.

5. Pilot-trial. The term 'pilot-trial' is used here to designate an initial, small-scale use of the product under conditions not so rigorous as those indicated by the term 'pilot-test'. A pilot-trial is conducted before final development of the product has been completed.

Are pilot-trials conducted?
(a) yes
(b) no

6. Pilot-test. Similar to a pilot-trial but more rigorous, including the use of at least one class group of students, the regular teacher using the product, and the administration of formal data-collection instruments to assess student learning.
Are pilot-tests conducted?
(a) yes
(b) no

7. Field-trial. Less rigorous than a field-test, a field-trial employs wide-scale use of informal methods of observation relying on teacher and student opinions about the utility and effectiveness of the product, stopping short of the requirements of good experimental design in selecting the sample.
Are field-trials conducted?
(a) yes
(b) no

8. Field-test. Similar to a field-trial but more rigorous, a field-test employs specification of the nature of the product to users, specification of the purposes of the field test to users, the wide-scale use of sampling procedures to select student groups, the administration of data-collection instruments to assess student learning, the training of those field-testing the product, and report writing of results for dissemination of information on the field-test to user groups.
Are field-tests conducted?
(a) yes
(b) no

9. To what extent does that form of learner-based verification and revision used meet the description given?
(a) yes, definitely
(b) yes, probably
(c) uncertain
(d) no, probably not
(e) no, definitely not

Section 3: Screening for Adoption

10. Does the process for adoption include screening?
(a) yes
(b) no
If you ticked 'no', go onto Section 4.

11. Are informal procedures used?
(a) yes
(b) no

12. Is an appraisal form used?
(a) yes
(b) no

Section 4: Descriptive analysis and evaluation

13. Does the process for product assessment include descriptive analysis and evaluation?
(a) yes
(b) no
If you ticked 'no', go onto Section 5.

14. Annotation. This term applies to a simple listing of characteristics of a material based upon descriptive criteria.
Are annotations conducted?
(a) yes
(b) no

15. Descriptive analytical review. This term applies to extended descriptive analysis of characteristics of a material.
Are descriptive analytical reviews conducted?
(a) yes
(b) no

16. Descriptive analytical and evaluative review. This term applies to extended descriptive analysis of characteristics of a material based upon descriptive and evaluative criteria.
Are descriptive analytical and evaluative reviews conducted?
(a) yes
(b) no

17. Instructional design analysis. This term applies to extended descriptive analysis of characteristics of a material based upon a model of curriculum development.
Are instructional design analyses conducted?
(a) yes
(b) no

18. Instructional design analysis to establish internal congruence. This term applies to extended descriptive analysis of characteristics of a material based upon matching the elements within a model of curriculum development.
Are instructional design analyses conducted to establish internal congruence?
(a) yes
(b) no

19. Instructional design analysis to establish external congruence. This term applies to extended descriptive analysis of characteristics of a material based upon a model of curriculum development that fits the material to an instructional program.
Are instructional design analyses conducted to establish external congruence?

(a) yes
(b) no

20. To what extent does that form of descriptive analysis and evaluation used meet the description given?
(a) yes, definitely
(b) yes, probably
(c) uncertain
(d) no, probably not
(e) no, definitely not

Section 5: Decision-making for Selection

21. Does the process for product selection include decision-making?
(a) yes
(b) no
If you ticked 'no', go onto Section 6.

22. Are informal procedures used?
(a) yes
(b) no

23. Are rating scales used?
(a) yes
(b) no

24. Are written briefs used?
(a) yes
(b) no

Section 6: Decision-making for Implementation

25. Does the process for product implementation include decision-making?
(a) yes
(b) no
If you ticked 'no', stop here.

26. Are informal procedures used?
(a) yes
(b) no

27. Are written briefs used?
(a) yes
(b) no

28. Are demonstrations used?
(a) yes
(b) no

APPENDIX C

QUESTIONNAIRE AND INTERVIEW SCHEDULE

Instruction:

Please tick the appropriate box or write your response in the space provided.

1. What is the name and address of your agency?
Name of Agency .....
Address .....
Postcode ..... Telephone [...] .....

2. Do staff members of your agency trial with students curriculum materials that are being developed at your agency with the view to revising the materials?
(a) yes
(b) no

3. Do staff members of your agency use an appraisal form, or some other informal process, to screen curriculum materials before the materials are used by teachers?
(a) yes
(b) no

4. Do staff members of your agency develop and provide bibliographies, reviews or descriptive evaluations of curriculum materials for teachers?
(a) yes
(b) no

5. Do staff members of your agency make recommendations on curriculum materials that affect their selection by teachers?
(a) yes
(b) no

6. Do staff members of your agency make recommendations to teachers on how particular curriculum materials can be implemented in their classrooms?
(a) yes
(b) no
If you have answered 'yes' to any of questions 2, 3, 4, 5 and 6, please complete the remainder of this form, and then return it. If you have answered 'no' to each of questions 2, 3, 4, 5 and 6, please stop here and return the form.

7. Would you, or a designated staff member, be prepared to participate in an interview in order to describe the processes involved in such activities as occur at your agency?
(a) yes
(b) no

8. Would you be prepared to supply written documentation describing the processes involved in such activities as occur at your agency?
(a) yes
(b) no
(Such documentation could be enclosed when you return this questionnaire).

9. What is the name of the contact person at your agency?
.....

Thank you for spending the time to complete this questionnaire.
Please return the completed questionnaire to:
Michael G. Watt, CCET, P.O. Box 256, NORTH HOBART, Tas. 7002.

APPENDIX D

GUIDELINES FOR THE SPECIFICATION OF THE PROSPECTIVE PROGRAM

Significance of focus

- Priority

Relate the mission or problem area to priorities in education.

Guideline 1

Describe the relationship to educational priorities recently expressed by the executive arm of government; the Department of Employment, Education and Training; or the National Board of Employment, Education and Training.

In the absence of any demonstrable relationship to priorities expressed by government officials or other national figures, develop the argument that the selected problem area is nonetheless significant and merits support.

Guideline 2

Describe the relationship to educational priorities expressed by other leading individuals, organisations and agencies.

Guideline 3

Discuss the significance in social and economic terms, as well as from an educational point of view. Indicate whether the social and economic contributions are expected to be regional or national in eventual impact.

Guideline 4

Identify the student population, demographic areas, and economic settings that are the targets of the proposed work.

Guideline 5

Discuss the likelihood that the work will continue to be significant in the future, even if priorities shift.

- Amenability to a research and development approach

Guideline 6

Justify the assertion that the problems, needs, or opportunities identified can be dealt with satisfactorily through research and development activities and cannot be approached better by another means.

Significance of outcomes

Guideline 7

Describe the significance of the prospective outcomes having direct benefits.

Guideline 8

Describe the significance of prospective outcomes in terms of timeliness and criticality.

Uniqueness

Guideline 9

Explain how the creation of the proposed program will make a distinct or unique contribution to research and development capability in education - a capability not already available in existing institutions - or how it will significantly extend or improve what existing institutions can do.

Guideline 10

Describe the distinction in mission or problem area that will set the proposed program apart.

Guideline 11

Describe any distinct role the proposed program will play in its geographic area.

Viability

- Planning capability

Guideline 12

Supply evidence that personnel who have guided and directed the development of the program plans can provide effective leadership in carrying them out.

- Political, legal, social, and moral viability

Guideline 13

Discuss the potential viability of the prospective program in political, legal, social and moral terms.

- Cooperability-cooptability

Guideline 14

Describe any collaborative relationships with schools, universities, state departments of education, research and development organisations, or federal programs. Explain how these relationships will assist the institution in achieving its objectives.

Guideline 15

Explain what services other agencies will need to provide. Give evidence to certify their availability.

Guideline 16

Describe the relationship between the proposed work and what has been accomplished previously or is under way elsewhere.

Parity

Guideline 17

Describe the procedure for establishing parity of representation from client groups.

Guideline 18

Describe the procedure for establishing parity of participation from key audiences.

Practicality

Guideline 19

Demonstrate that there is a reasonable balance between activities that accomplish organisationally defined objectives and exploratory projects that involve high risk but promise high payoff.

Guideline 20.

Describe a plan for publicising the program that will make the nature of its work clear, demonstrate its significance, and arouse interest in its potential.

Guideline 21

Specify the starting points, milestone points, and ending points for all programs and all program components.

Personnel

Guideline 22

Explain how staff qualifications are relevant to carrying out the proposed program. Demonstrate how staff experiences are sufficiently varied and comprehensive.

Guideline 23

Describe the sources that will provide a continuing supply of regular personnel as well as consultants.

Guideline 24

Supply evidence that persons who engaged in planning and will continue as permanent staff members understand the plan, are in agreement with it, and are committed to carrying it out.

Adequacy of program elements

Objectives

Guideline 25

Specify defensible, clear, important objectives for the program.
Supply evidence to justify selection of the objectives and to demonstrate that they were chosen reasonably from among a set of alternatives.
State the objectives in operational terms, clearly specifying what the terminal product of each objective will be. For example, is the product to be new knowledge, some form of educational practice, or new instructional materials? Indicate the student populations, demographic areas, economic settings to be affected by achievement of the objectives.

Demonstrate that the objectives strike a favourable balance between addressing critical needs and using available opportunities for meeting needs.
State whether the achievement of the objectives is expected to make an incremental improvement, a sharp modification, or a complete change in the schools.

Relevance of objectives to program and institutional goals

Guideline 26

Present the configuration of mission-program-component-products so that their completeness and their internal consistency will be apparent.
Demonstrate that the products of the program are necessary for the institution to achieve its mission.
Demonstrate that programs are derived from the mission, that components constitute coherent programs, and that components will produce the anticipated products.

Adequacy of procedural design

Guideline 27

Specify defensible, clear, and relevant procedures for achieving the objectives.
Supply evidence to justify the selection of the procedures and to demonstrate that the choice among the available alternatives was reasonable.
State the procedures clearly in operational terms.
Show how the procedures are related to achieving the objectives.
Describe the mechanisms for evaluating the program processes and the products, and demonstrate their adequacy for self-correction and redirection.

Methodological adequacy

Guideline 28

Demonstrate that the methodology is appropriate, sufficient and economical for the work.

Appropriateness of schedule

Guideline 29

Demonstrate that the schedule is appropriate, sufficient and economical for the work.

Adequacy of facilities

Guideline 30

Demonstrate that the facilities are appropriate, sufficient and economical for the work.

Budget

Guideline 31

Supply a detailed budget.
Specify the costs of personnel, equipment and materials, special services, travel, communications, and space rental.
Demonstrate that the proposed budget is related to the proposed work.

APPENDIX E

SURVEY OF ATTITUDES ON POTENTIAL FOREIGN INPUT INTO THE PROSPECTIVE PROGRAM IN AUSTRALIAN EDUCATION

Background

This survey is intended to determine your opinions on the development of a relationship between your organisation and the prospective program in Australian education.

The questionnaire employs a technique termed Policy Implications Analysis, reported by Doren L. Madey and A. Jackson Stenner, 'Policy Implications Analysis: A Method for Improving Policy Research and Evaluation', in C. B. Aslanian (ed.), 1981, *Improving Educational Evaluation Methods: Impact on Policy* (Sage Research Progress Series in Evaluation, vol. 11), Beverly Hills: Sage Publications, 23-39.

Policy Implications Analysis is a technique intended to maximise the likelihood that an evaluation report will have an impact on decision-making. The Policy Implications Analysis technique is based upon two futures techniques: the Delphi Method; and Scenario Writing. The technique employs five steps: firstly, generation of hypothetical findings; secondly, preparation of a questionnaire to be administered to a selected panel of respondents; thirdly, administration of the questionnaire; fourthly, analysis of responses; and fifthly, use of the analysed responses to develop a set of policy-relevant hypotheses.

This survey instrument is comprised of two major sections:

1. the Introduction to the exercise, which familiarises you with the Policy Implications Analysis technique and the program under examination; and
2. the Questionnaire.

The questionnaire is divided into seven parts:

Part I Background Information;
Part II Institutional Capability (Preferential);
Part III Institutional Capability (Optional);
Part IV Program Elements (Objectives 1 to 6);
Part V Management - Personnel;
Part VI Funding - Schedule; and
Part VII Facilities - Communication.

Each part of the questionnaire, except the first part, contains an identical set of four components: firstly, a Hypothetical Finding; secondly, a sub-set of Guidelines on which you

respond through a graphic rating scale; and lastly, two sub-sets of open-ended questions, Significant Policy Implications and a Finding Statement.

Responding to the Questionnaire

It would be preferred if the responses were typed.
Completing the questionnaire could take one person several hours. Several people, however, may respond independently to the questionnaire, each answering a particular part where expertise may be called upon. Respondents may also consult with their colleagues. This process is likely to expedite completion of the questionnaire.

SECTION 1: THE INTRODUCTION

Step 1: Please familiarise yourself with the program under scrutiny by reading the enclosed copies of Chapter 2 and Chapter 4 of the evaluation report.
Step 2: Please familiarise yourself with the technique of Policy Implications Analysis by reading the examples below, which include both items and responses.
(Note: At this point, examples provided by Madey, D.L. and Stenner, A.J. 'Policy Implications Analysis: A Method for Improving Policy Research and Evaluation', pp 32-36 in *Improving Educational Evaluation Methods: Impact on Policy* by Aslanian, C.B. (ed.), copyright (c) 1981 by Sage Publications, were reprinted by permission of Sage Publications, Inc. In accordance with the publisher's copyright requirements, the examples are not reprinted in Appendix E.)

SECTION 2: THE QUESTIONNAIRE

PART I: BACKGROUND INFORMATION

Please write your response in the space provided or check the appropriate box.

1. What is the name of your organisation?

2. What is the position in the organisation of the person authorising these responses?

3. Is your organisation prepared to provide the information requested by completing the questionnaire?
A. yes
B. no, because it is the organisation's policy not to make such information available
C. no, because of another reason (please specify)

If you answered 'yes' to Question 3, please go onto Question 4 and then complete the Questionnaire. If you answered 'no' to Question 3, please stop here, detach Part I of the Questionnaire and return it by air mail to Mr. Michael Watt, Staff Development Section, Education Department of Tasmania, P.O. Box 256, North Hobart, Tasmania 7002, Australia.

4. Does your organisation give permission to the author of this evaluation report to use the responses to develop a set of policy relevant hypotheses?
A. no
B. yes, without conditions

C. yes, but with conditions (please specify)

Note: It is accepted by the researcher that opinions expressed in the responses are provided for research purposes only and are in no way binding upon the organisation providing this information.

PART II: INSTITUTIONAL CAPABILITY (PREFERENTIAL)

The items below in Part II refer to the following hypothetical finding.

A. Hypothetical Finding

As a preferential plan, the program is infused within a collaborative project conducted by a consortium, comprising a foreign organisation together with the Curriculum Development Centre (CDC) and the Australian Schools Catalogue Information Service (ASCIS).
Responsibility for research and development activities of the project is appropriated to the Curriculum Development Centre, although dependent to a considerable extent upon assistance from the foreign organisation. The implementation and diffusion of the project is carried out by the ASCIS, but supported by both the CDC and the foreign organisation. The role of the foreign organisation is largely advisory but its participation extends to sharing research activities, conducting a pilot study at state level, sharing data and other elements of common interest on a cooperative basis.

B. Guidelines

Below is a sub-set of five questions, numbered 1 to 5, each followed by a graphic rating scale. Please read each question and then circle the number that best fits your opinion of the relationship between the question and the hypothetical finding.

1. To what degree is this finding within the purview of your organisation?

Definitely within							Definitely without		
1	2	3	4	5	6	7	8	9	10

2. How much knowledge do you have of the general area addressed by this finding?

Much knowledge							Little knowledge		
1	2	3	4	5	6	7	8	9	10

3. To what degree does this finding correspond with your expectations?

Expected							Not expected		
1	2	3	4	5	6	7	8	9	10

4. To what degree does this finding have immediate policy implications for a potential relationship between the prospective program and your organisation?

To a large extent						To a limited extent			
1	2	3	4	5	6	7	8	9	10

5. Given that this finding reflects reality, is it stated in a concise and clear fashion?

Communicates well							Communicates poorly		
1	2	3	4	5	6	7	8	9	10

C. Significant Policy Implications

For each question in this sub-set, numbered 1 to 2, write in your response in the space provided.

1. What policy action(s) on the part of your organisation to support the prospective program might be precipitated by this finding?

2. What further information would you need before taking action based upon this finding?

D. Finding Statement

For the item in this sub-set, write in your response in the space provided.

Write a 'finding statement' that would support a recommendation on your part to drastically revamp the hypothetical finding for the prospective program.

PART III: INSTITUTIONAL CAPABILITY (OPTIONAL)

The items below in Part III refer to the following hypothetical finding.

A. Hypothetical Finding

As an optional plan, the Australian Schools Catalogue Information Service (ASCIS) collaborates with a foreign organisation to develop and to implement the project for Australian education. The foreign organisation is entirely responsible for the research and development activities of the project, which includes a pilot study at the state level. Responsibility for the implementation and the dissemination of the project is carried out by the ASCIS, but supported by the foreign organisation. Because of the extensive degree of support required, the foreign organisation establishes and maintains an office in Australia. Therefore, the foreign organisation has scope to contribute both processes and products of its programs that are appropriate to the Australian educational community.

B. Guidelines

Below is a sub-set of five questions, numbered 1 to 5, each followed by a graphic rating scale. Please read each question and then circle the number that best fits your opinion of the relationship between the question and the hypothetical finding.

1. To what degree is this finding within the purview of your organisation?

Definitely within									Definitely without
1	2	3	4	5	6	7	8	9	10

2. How much knowledge do you have of the general area addressed by this finding?

Much knowledge									Little knowledge
1	2	3	4	5	6	7	8	9	10

3. To what degree does this finding correspond with your expectations?

Expected									Not expected
1	2	3	4	5	6	7	8	9	10

4. To what degree does this finding have immediate policy implications for a potential relationship between the prospective program and your organisation?

To a large extent									To a limited extent
1	2	3	4	5	6	7	8	9	10

5. Given that this finding reflects reality, is it stated in a concise and clear fashion?

Communicates well — Communicates poorly

1 2 3 4 5 6 7 8 9 10

C. Significant Policy Implications

For each question in this sub-set, numbered 1 to 2, write in your response in the space provided.

1. What policy action(s) on the part of your organisation to support the prospective program might be precipitated by this finding?

2. What further information would you need before taking action based upon this finding?

D. Finding Statement

For the item in this sub-set, write in your response in the space provided.

Write a 'finding statement' that would support a recommendation on your part to drastically revamp the hypothetical finding for the prospective program.

PART IV PROGRAM ELEMENTS (OBJECTIVES 1 TO 6)

The items below in Part IV refer to the following hypothetical finding.

A. Hypothetical Finding

It is decided that product producer information, product analyst information and product user information are collected in the program following the conduct of a pilot study. A decision is made that the technique of instructional design analysis based upon Tyler's objectives model, is applied to synthesise this information. Because of this decision, the EPIE instrument is adopted for data collections. It is also accepted that the instrument must be adapted to Australian requirements and conditions through revisions based upon criticisms received from educators. An in-service course to train, to certificate and to monitor analysts in the adopted technique of instructional design analysis is then developed and implemented. The intent of this course is to ensure high inter-rater reliability. Simultaneously, software, compatible to both the needs of the prospective program and the ASCIS standards, is developed through contract for the storage and the retrieval of data. In the meantime, it is decided that the synthesised data will be diffused through printed products until such a time as the data can be provided on-line to users. Assistance must be sought from a foreign organisation in order that each objective is adopted successfully.

B. Guidelines

Below is a sub-set of five questions, numbered 1 to 5, each followed by a graphic rating scale. Please read each question and then circle the number that best fits your opinion of the relationship between the question and the hypothetical finding.

1. To what degree is this finding within the purview of your organisation?

Definitely within — Definitely without

1 2 3 4 5 6 7 8 9 10

2. *How much knowledge do you have of the general area addressed by this finding?*

Much knowledge — Little knowledge

1 2 3 4 5 6 7 8 9 10

3. To what degree does this finding correspond with your expectations?

Expected — Not expected

1 2 3 4 5 6 7 8 9 10

4. To what degree does this finding have immediate policy implications for a potential relationship between the prospective program and your organisation?

To a large extent — To a limited extent

1 2 3 4 5 6 7 8 9 10

5. Given that this finding reflects reality, is it stated in a concise and clear fashion?

Communicates well — Communicates poorly

1 2 3 4 5 6 7 8 9 10

C. Significant Policy Implications

For each question in this sub-set, numbered 1 to 2, write in your response in the space provided.

1. What policy action(s) on the part of your organisation to support the prospective program might be precipitated by this finding?

2. What further information would you need before taking action based upon this finding?

D. Finding Statement

For the item in this sub-set, write in your response in the space provided.

Write a 'finding statement' that would support a recommendation on your part to drastically revamp the hypothetical finding for the prospective program.

PART V: MANAGEMENT - PERSONNEL

The items below in Part V refer to the following hypothetical finding.

A. Hypothetical Finding

For the preferential plan, the conduct of the selection process for both management and professional staffs shows that all prospective Australian staff members are deficient in specific skills needed to run the program successfully. The management personnel appointed has gained experience in directing the operation of a clearinghouse, but cannot draw upon prior experiences in managing these tasks when they relate to specific methods, techniques and practices in the program. As a means to overcome this constraint, the management decides to employ consultants from a foreign organisation to advise on such matters. Whilst the professional staff possesses the requisite expertise in particular content areas, it is also deficient

in knowledge and skills of these methods, techniques and practices. It is also decided that a foreign organisation should provide the trainers of the staff members of the program.

B. Guidelines

Below is a sub-set of five questions, numbered 1 to 5, each followed by a graphic rating scale. Please read each question and then circle the number that best fits your opinion of the relationship between the question and the hypothetical finding.

1. To what degree is this finding within the purview of your organisation?

Definitely within									Definitely without
1	2	3	4	5	6	7	8	9	10

2. How much knowledge do you have of the general area addressed by this finding?

Much knowledge									Little knowledge
1	2	3	4	5	6	7	8	9	10

3. To what degree does this finding correspond with your expectations?

Expected									Not expected
1	2	3	4	5	6	7	8	9	10

4. To what degree does this finding have immediate policy implications for a potential relationship between the prospective program and your organisation?

To a large extent							To a limited extent		
1	2	3	4	5	6	7	8	9	10

5. Given that this finding reflects reality, is it stated in a concise and clear fashion?

Communicates well									Communicates poorly
1	2	3	4	5	6	7	8	9	10

C. Significant Policy Implications

For each question in this sub-set, numbered 1 to 2, write in your response in the space provided.

1. What policy action(s) on the part of your organisation to support the prospective program might be precipitated by this finding?

2. What further information would you need before taking action based upon this finding?

D. Finding Statement

For the item in this sub-set, write in your response in the space provided.
Write a 'finding statement' that would support a recommendation on your part to drastically revamp the hypothetical finding for the prospective program.

PART VI: FUNDING - SCHEDULE

The items below in Part VI refer to the following hypothetical finding.

A. Hypothetical Finding

Because the program is to be operated by organisations at the national level of Australian education, the preferential plan is financed from federal funds. These funds are sufficient to finance the costs of personnel, equipment and materials, special services, travel, communications and space rental. Such funds, however, are insufficient to support the research necessary to develop the program. The agencies responsible for maintaining the program, therefore, seek funds to support research from a foreign organisation.

The provision of a schedule is dependent upon both the types of funding and the prior knowledge of the management in this field. Because the management staff cannot establish such a configuration, it lacks the capability to specify a schedule. Instead, the short-term objectives are implemented sequentially at points when judged appropriate. Hindsight proves that several of these judgements are incorrect. Because no provision has been made at points in the sequence to recycle activities, there is no way to correct unsatisfactory outcomes. Consequently, the management decides to employ consultants from a foreign organisation to determine this configuration, and then provide a schedule.

B. Guidelines

Below is a sub-set of five questions, numbered 1 to 5, each followed by a graphic rating scale. Please read each question and then circle the number that best fits your opinion of the relationship between the question and the hypothetical finding.

1. To what degree is this finding within the purview of your organisation?

Definitely within									Definitely without
1	2	3	4	5	6	7	8	9	10

2. How much knowledge do you have of the general area addressed by this finding?

Much knowledge									Little knowledge
1	2	3	4	5	6	7	8	9	10

3. To what degree does this finding correspond with your expectations?

Expected									Not expected
1	2	3	4	5	6	7	8	9	10

4. To what degree does this finding have immediate policy implications for a potential relationship between the prospective program and your organisation?

To a large extent						To a limited extent			
1	2	3	4	5	6	7	8	9	10

5. Given that this finding reflects reality, is it stated in a concise and clear fashion?

Communicates well									Communicates poorly
1	2	3	4	5	6	7	8	9	10

C. Significant Policy Implications

For each question in this sub-set, numbered 1 to 2, write in your response in the space provided.

1. What policy action(s) on the part of your organisation to support the prospective program might be precipitated by this finding?

2. What further information would you need before taking action based upon this finding?

D. Finding Statement

For the item in this sub-set, write in your response in the space provided.

Write a 'finding statement' that would support a recommendation on your part to drastically revamp the hypothetical finding for the prospective program.

PART VII: FACILITIES - COMMUNICATION

The items below in Part VII refer to the following hypothetical finding.

A. Hypothetical Finding

For the preferential plan, the project uses the facilities of both the Curriculum Development Centre and the Australian Schools Catalogue Information Service. Because it is found that the facilities of the Curriculum Development Centre are inadequate to support the research, it is decided to seek dependence upon the research facilities of a foreign organisation. Because the ASCIS has not developed, as yet, the on-line facilities to diffuse the program to users, assistance is sought from a foreign organisation to specify the characteristics of the software. Communications are assumed by the ASCIS as part of its role in diffusing the program. The ASCIS plan developed to publicise the program during its developmental phase involves publication of a brochure with issues printed at regular intervals. The brochure is used to publicise timely developments at the point of adoption. During the operational phase, a newsletter is published at monthly or quarterly intervals to inform users of significant issues in the field and about the program. The newsletter includes self-report forms to gather data from users. As a means to maximise the effect of publicising the program, the management staff decides to employ consultants from a foreign organisation to advise on such matters.

B. Guidelines

Below is a sub-set of five questions, numbered 1 to 5, each followed by a graphic rating scale. Please read each question and then circle the number that best fits your opinion of the relationship between the question and the hypothetical finding.

1. To what degree is this finding within the purview of your organisation?

Definitely within									Definitely without
1	2	3	4	5	6	7	8	9	10

2. How much knowledge do you have of the general area addressed by this finding?

Much knowledge									Little knowledge
1	2	3	4	5	6	7	8	9	10

3. To what degree does this finding correspond with your expectations?

Expected									Not expected
1	2	3	4	5	6	7	8	9	10

4. To what degree does this finding have immediate policy implications for a potential relationship between the prospective program and your organisation?

To a large extent						To a limited extent			
1	2	3	4	5	6	7	8	9	10

5. Given that this finding reflects reality, is it stated in a concise and clear fashion?

Communicates well									Communicates poorly

1 2 3 4 5 6 7 8 9 10

C. Significant Policy Implications

For each question in this sub-set, numbered 1 to 2, write in your response in the space provided.

1. What policy action(s) on the part of your organisation to support the prospective program might be precipitated by this finding?

2. What further information would you need before taking action based upon this finding?

D. Finding Statement

For the item in this sub-set, write in your response in the space provided.

Write a 'finding statement' that would support a recommendation on your part to drastically revamp the hypothetical finding for the prospective program.

Returning the completed Questionnaire

Both the preliminary instructions and the Introduction can be detached from the Questionnaire. Please return the completed Questionnaire by air mail to:
Mr. Michael Watt,
Staff Development Section,
P.O. Box 256,
NORTH HOBART,
TASMANIA, 7002,
AUSTRALIA

BIBLIOGRAPHY

Alabama University and Mobile County Public Schools
1976 *Direction for Alabama reading teachers #1: commercial materials for Title 1 reading teachers*, second edition
Birmingham: Alabama University; Mobile: Mobile County Public Schools
ED 253 861

American School Board Journal
1975 'A "consumer's union" for education can tell you when your district is being gypped', *American School Board Journal*, 162:1, 38-40

Antell, L.
1981 *Indian education: guidelines for evaluating textbooks from an American Indian perspective*
Denver: Education Commission of the States
ED 209 051

Arizona State Department of Education
1974a *What every child should know ... United States and Arizona history course of study, criteria for textbook* selection
Phoenix: Arizona State Department of Education
ED 141 212

Arizona State Department of Education
1974b *What every child should know ... social studies course of study, criteria for textbook selection*
Phoenix: Arizona State Department of Education
ED 141 211

Armstrong, J.R.
1973 *A sourcebook for the evaluation of instructional materials and media*
Arlington: Special Education IMC/RMC Network; Madison: Wisconsin University
ED 107 050

Australia, Parliament
1987 *Higher education: a policy discussion paper*, circulated by The Hon. J.S. Dawkins, Minister for Employment, Education and Training
Canberra: Australian Government Publishing Service

Australian Council for Educational Research
1976 *Curriculum materials review guide*
Hawthorn: Australian Council for Educational Research

Australian Schools Catalogue Information Service
1985a *A statement describing the functions of integrated school library automation systems for optimum use with the Australian Schools Catalogue Information Service*
Melbourne: Australian Schools Catalogue Information Service

Australian Schools Catalogue Information Service
1985b *ASCIS subject heading list*
Port Melbourne : D.W. Thorpe

Australian Schools Catalogue Information Service
1987 Abstract standards, unpublished document
Camberwell: Australian Schools Catalogue Information Service

Australian Schools Catalogue Information Service
n.d. 'ASCIS in action'
ASCIS Newsletter, 4: 1-3
Melbourne: Australian Schools Catalogue Information Service

Banathy, B.H. et al.
1976 *The analysis and reporting of evaluation training materials developed by research and development laboratories and centers. Final report*
San Francisco: Far West Laboratory for Educational Research and Development
ED 150 166

Banks, H.A.
1974 *Evaluation of an instructional program in training teachers to analyze educational materials for possible racial bias*
Paper presented at the annual meeting of the American Educational Research Association, Chicago, Illinois, April 1974
ED 090 307

Benevento, J.
1984 *Choosing and using textbooks*
Paper presented at the annual meeting of the American Council on the Teaching of Foreign Languages, Chicago, Illinois, 16-18 November 1984
ED 253 080

Blackburn, G.
1974 *A checklist for selecting elementary social studies materials*
Roseville: Social Studies Service Center
ED 090 132

Blaunstein, P.

1983 *An overview of state textbook selection procedures*
Speech presented at the National Forum on Excellence in Education, Indianopolis, Indiana, 6-8 December 1983
ED 247 000

Bloom, B.S., Englehart, M.D., Furst, E.J., Hill, W.H. and Krathwohl, D.R.
1956 *Taxonomy of educational objectives: the classification of educational goals* (Handbook 1: Cognitive Domain)
New York: David McKay

Brady, L.
1983 *Curriculum development in Australia: presage, process, product*
Sydney: Prentice-Hall of Australia

Brickell, H.M. and Aslanian, C.B.
1979 *Field testing educational products* (Aid No. 3 in Instructional Aids Series)
Kalamazoo: Western Michigan University
ED 182 319

Brunelle, R.L. et al.
1983 *How can we improve both the quality of textbooks and the process for selecting them?*
Discussion group paper presented at the National Forum on Excellence in Education, Indianapolis, Indiana, 6-8 December 1983
ED 247 000

California State Department of Education
1981 *Interim guidelines for evaluation of instructional materials with respect to social content*
Sacramento: California State Department of Education
ED 206 715

California State Department of Education
1982 *Standards for evaluation of instructional materials with respect to social content*
Sacramento: California State Department of Education
ED 230 471

California State Department of Education
1984 *Instructional materials sunset review report. A report to the California legislature, as required by senate bill 1155, chapter 1250, statutes of 1983*
Sacramento: California State Department of Education
ED 256 748

Canadian Exchange for Instructional Materials Analysis
1987 *Canadian Exchange for Instructional Materials Analysis (CEIMA)*
Victoria: Ministry of Education, Province of British Columbia

Carter, Y. (comp.)
1971 *Aids to media selection for students and teachers*
Washington: Bureau of Elementary and Secondary Education

ED 053 340

Chapman, H.C.
1975 *Selecting short stories for early stages of language learning*
Paper presented at the Southern Conference on Language Teaching, New Orleans, Louisiana, 1975
ED 139 249

Charuhas, M.S.
1984 *A closer look at books. A self instructive guide to selecting and evaluating materials.*
DeKalb: Northern Illinois University; Chicago: Region 1 Adult Education Service Center
ED 256 913

Clark, D.L. and Guba, E.G.
1967 'An examination of potential change roles in education'.
In: Sand, O. (ed.), *Rational planning in curriculum and instruction*
Washington: National Education Association, 111-134

Cohen, M.D. (ed).
1976 *Selecting educational equipment and materials for school and home*
Washington: Association for Childhood Education International
ED 122 455

Cohen, S. and Koehler, N.
1975 *Instructional materials: a bibliography for their selection, evaluation and use*
New York: City University of New York
ED 140 516

Commonwealth Schools Commission
1987 *In the national interest: secondary education and youth policy in Australia*
Canberra: Commonwealth Schools Commission

Cotera, M.P. (comp.)
1982 *Checklists for counteracting race and sex bias in educational materials*
Newton: Educational Development Center
ED 221 612

Council on Interracial Books for Children
1977 *Stereotypes, distortions and omissions in U.S. history textbooks*
New York: Racism and Sexism Resource Center for Educators

Council on Interracial Books for Children
1979 *Guidelines for selecting bias-free textbooks and storybooks*
New York: Council on Interracial Books for Children
ED 199 352

Council on Interracial Books for Children
1980 *10 quick ways to analyze children's books for racism and sexism*

New York: Racism and Sexism Resource Centre for Educators
ED 188 852

Curriculum Development Centre
1977 *Curriculum evaluation* (CDC Professional Series)
Canberra: Curriculum Development Centre

Darling, S. et al.
1983 *Guide to selection of adult literacy materials. Analyze before you buy*
Louisville: Jefferson County Public Schools
ED 235 321

Davis, E.
1981 *Teachers as curriculum evaluators* (Classroom and Curriculum in Australia: No. 4)
Sydney: George Allen and Unwin

Davis, T.E. and Eckenrod, J.S.
1972 'A process for selecting instructional materials'
Social Education, 36:7, 714-717

Dawkins, J.S.
1987 *The challenge for higher education in Australia*
Canberra: Australian Government Publishing Service

Dawkins, J.S.
1988 *Strengthening Australia's schools: a consideration of the focus and content of schooling*
Canberra: Parliament House

De Leon, J.
1983 *Evaluating and adapting materials for use with bilingual exceptional children*
Paper presented at the annual international convention of The Council for Exceptional Children, Detroit, Michigan, 4-8 April 1983
ED 230 007

Deya, L.L.
1975 *A bilingual librarian looks at book selection for children and young adults*
Atlanta: Southern Conference on Language Teaching
ED 139 247

Dissemination and Assessment Center for Bilingual Education
1977 *Cartel: annotations and analyses of bilingual multicultural materials.* (Winter 1976-77, Volume IV, Number 2)
Austin: Dissemination and Assessment Center for Bilingual Education
ED 140 613

Douma, R.G.
1973 *Book selection policies, book complaint policies and censorship of selected Michigan public high schools*

Ann Arbor: University of Michigan
ED 078 448

Duke, C.R.
1985 *A look at current state-wide adoption procedures*
Paper presented at the annual meeting of the National Council of Teachers of English, Spring Conference, Houston
ED 254 864

Dusel, J.
1970 *Criteria for selection of materials for foreign language, kindergarten and grades one through eight*
Sacramento: Foreign Language Association of Greater Sacramento, California
ED 039 799

Eash, M.J.
1969 *Evaluation of instructional materials for exceptional children and youth: a preliminary instrument*
New York: City University of New York
ED 040 540

Eash, M.J.
1970 *Developing an instrument for assessment of instructional materials* (Form IV)
New York: City University of New York
ED 041 947

Eash, M.J.
1972a 'Evaluating instructional materials'
Audiovisual Instruction, 17:10, 12-13

Eash, M.J.
1972b 'Developing an instrument for assessing instructional materials'. In: Ontario Institute for Studies in Education, *Curriculum theory network* (Monograph Supplement),
Toronto: Ontario Institute for Studies in Education, 193-200

Eash, M.J.
1974 'Instructional materials' In: Walberg, H.J. (ed.) *Evaluating educational performance: a sourcebook of methods, instruments and examples*
Berkeley: McCutchan Publishing, 125-152

Eash, M.J. et al.
1975 *Evaluation of instructional materials (TM Report 45)*
Princeton: Educational Testing Service
ED 117 947

Eastern Pennsylvania Regional Resources Center for Special Education
1977 *Individualized materials for the handicapped: a guide for selection*
King of Prussia: Eastern Pennsylvania Regional Resources Center for Special Education

ED 148 048

Education Department of South Australia
1987 'Selection and access for books and learning materials: guidelines for schools'
Education Gazette (Supplement 87/4)

Education Department of Tasmania
1983 *Resource management guide for Australian schools*
Hobart: Education Department of Tasmania

Education Department of Tasmania
1985 'Library collection development in schools and colleges'
The Tasmanian Education Gazette, 19:8, 70-72

Education Department of Tasmania
n.d. Learning resources review, unpublished document
Hobart: Education Department of Tasmania

Education Week
1984 'States to work on improving text selection, adoption policies'
Education Week, 28 March 1984, 1,16

Educational Products Information Exchange Institute et al.
1969 *Evaluation practices used in the selection of educational materials and equipment*
New York: Educational Products Information Exchange Institute; Albany: New York State Education Department; Albany: New York State University
ED 038 040

Educational Products Information Exchange Institute
1974 *Fits and misfits: what you should know about your child's learning materials*
New York: Educational Products Information Exchange Institute; Columbia: National Committee for Citizens in Education
ED 096 672

Educational Products Information Exchange Institute
1975 *EPIE career education S*E*T*. Volume 1: how to select and evaluate instructional materials *** selection and evaluation tools*
New York: Educational Products Information Exchange Institute
ED 126 360

Educational Products Information Exchange Institute
1976a *Selector's guide for bilingual education materials, volume 1* (EPIE Report: Number 73)
New York: Educational Products Information Exchange Institute
ED 217 705

Educational Products Information Exchange Institute

1976b *Selector's guide for bilingual education materials, volume 2* (EPIE Report: Number 74)
New York: Educational Products Information Exchange Institute
ED 217 708

Educational Products Information Exchange Institute
1976c *Description of selection guidelines, description of guidelines, training materials, and consumer-oriented catalogs to be used in the selection of instructional materials* (Product 4)
New York: Educational Products Information Exchange Institute
ED 156 219

Educational Products Information Exchange Institute
1977a *Report on a national study of the nature and the quality of instructional materials most used by teachers and learners* (EPIE Report No. 76)
New York: Educational Products Information Exchange Institute

Educational Products Information Exchange Institute
1977b *EPIE training form I*
New York: Educational Products Information Exchange Institute

Educational Products Information Exchange Institute
1980a *Deciphering L*V*R : a key for consumers and publishers to learner verification and revision* (EPIE Report No. 92m)
New York: Educational Products Information Exchange Institute

Educational Products Information Exchange Institute
1980b *National Institute of Education* (Final Report, NIE-G-79-0083)
New York: Educational Products Information Exchange Institute

Educational Products Information Exchange Institute
1984 *The educational software selector*
New York: The Teachers College Press

Educational Products Information Exchange Institute
1985 *Textbook Analysis Form*
Water Mill: Educational Products Information Exchange Institute

Educational Products Information Exchange Institute
1986a 'Adoption vs. utilization'
EPIEgram Materials, 14:8, 1-4

Educational Products Information Exchange Institute
1986b 'Postscript: The TIE project'
EPIEgram Materials, 14:8, 4-6

Educational Products Information Exchange Institute
1986c *EPIE Institute inservice training modules for helping schools to make effective use of the Degrees of Reading Power* (EPIE/DRP Training Workshops)

Water Mill: Educational Products Information Exchange Institute

Educational Products Information Exchange Institute
n.d. *Curriculum/content/evaluation correlation module* (Leader's Edition)
Water Mill: Educational Products Information Exchange Institute

Eisner, E.W.
1970 *The evaluation and research of curriculum materials*
Paper presented at the annual meeting of the American Educational Research Association, Minneapolis, Minnesota, March 1970
ED 041 946

Elliott, D.L.
1985 personal communication

Epstein, M.G. et al.
1971 *Selection of products for focused dissemination*
Princeton: Educational Testing Service
ED 050 308

Eraut, M.
1988 personal communication

Eraut, M., Goad, L. and Smith, G.
1975 *The analysis of curriculum materials* (University of Sussex Education Area Occasional Paper 2)
Brighton: University of Sussex

Far West Laboratory for Educational Research and Development
1980 *Selecting children's books with multicultural perspective*
San Francisco: Far West Laboratory for Educational Research and Development
ED 177 048

Felton, H. and Johnson, N.J.
1986 *Review of learning resources in Tasmanian schools: a multisite case study approach*
Paper presented at the annual conference of the Australian Association for Research in Education, Melbourne, November, 1986

Florida State Department of Education
1975 *Criteria for instructional materials selection: 1975 adoption*
Tallahassee: Florida State Department of Education
ED 101 753

Fox, T.E.
1972 *Using evaluative assertion analysis for social studies research*
Paper presented at the annual meeting of the National Council for the Social Studies, Boston, Massachusetts, November 1972

ED 073 963

Garcia, J. and Armstrong, D.G.
1978 *A simple procedure for evaluating textbooks for their treatment of selected groups that minimizes inter-rater variability*
Paper presented at the annual meeting of the Association for Supervision and Curriculum Development, Washington, D.C., 4-8 March 1978
ED 163 466

Garcia, J. and Armstrong, D.G.
1979 'Textbook evaluation: a simple procedure for identifying treatment of selected groups' *The Social Studies*, 70:1, 32-37

George Washington University
1968 *Proceedings of conference for the evaluation of instructional materials*
Washington, D.C., 5-6 April 1968
Washington: George Washington University
ED 027 657

Georgia State Department of Education
1975 *Viewpoints. Instructional materials selection at state and local levels. Suggestions for organization and use*
Atlanta: Georgia State Department of Education
ED 148 398

Government of Tasmania
1982 *Review of efficiency and effectiveness of the Education Department*
Hobart: University of Tasmania

Greenlaw, M.J. et al.
1973 *A study of the influence of advertising techniques on selection of instructional reading materials by prospective teachers*
Paper presented at the 1973 National Reading Conference
ED 127 550

Haas, M.E.
1985 *Evaluating sponsored materials: how to do it in the social studies classroom* (Series 4, Number 3)
Washington: National Council for the Social Studies
ED 258 882

Hahn, C.L.
1978 *The adoption of new social studies textbooks in Georgia: a case study of innovation diffusion*
Paper presented at the annual meeting of the American Educational Research Association, Toronto, Ontario, 27-31 March 1978
ED 156 567

Haley, F. (ed.)
1982 *Guide to selected ethnic heritage materials*
Boulder: Social Science Education Consortium
ED 216 949

Harrison, D.
1979 *Adult basic education materials evaluation*
Guide prepared at the University of Arizona
ED 173 768

Hernandez, A. and Melnick, S.L.
n.d. *Modular sequence: English as a second language, methods and techniques. TTP001.13. Evaluating and adapting materials*
West Hartford: Hartford University
ED 095 141

Illinois State Board of Education
1981 *A guide for evaluating and selecting multicultural instructional materials*
Springfield: Illinois State Board of Education
ED 192 956

Illinois State Office of Education
1975 *Guidelines for the evaluation and selection of ethnically valid instructional materials*
Chicago: Illinois State Office of Education
ED 150 237

Indiana State Department of Public Instruction
1974 *TIME (Teacher Initiated Materials Evaluation) project report. An aid in the selection of special education materials*
Indianapolis: Indiana State Department of Public Instruction
ED 143 190

Indiana State Department of Public Instruction
1977 *Criteria for evaluating instructional materials. Reading effectiveness program*
Indianapolis: Indiana State Department of Public Instruction
ED 201 985

Institute for Educational Development
1969 *Selection of educational materials in the United States public schools*
New York: Institute for Educational Development
ED 044 030

Iowa State Department of Public Instruction
1969 *Guidelines for the evaluation and selection of textbooks and other instructional materials*
Des Moines: Iowa State Department of Public Instruction
ED 070 088

Jeffery, P.L.
1987 personal communication

Johnson, C.H.
1979 *Choosing materials that do the job* (The ACTFL Foreign Language Education Series, Volume 10)
New York: American Council on the Teaching of Foreign Languages
ED 180 214

Joint Committee of the National Education Association and Association of American Publishers
1972 *Selecting instructional materials for purchase, procedural guidelines*
Washington: Joint Committee of the National Education Association and Association of American Publishers
ED 058 170

Kamhi, M.M.
1982a *Book and materials selection for school libraries and classrooms: procedures, challenges and responses*
Chicago: American Library Association; Alexandria: Association for Supervision and Curriculum Development; Washington: Association of American Publishers
ED 208 885

Kamhi, M.M.
1982b *Limiting what students shall read, books and other learning materials in our public schools: how they are selected and how they are removed*
Chicago: American Library Association; Alexandria: Association for Supervision and Curriculum Development; Washington: Association of American Publishers
ED 210 771

Kamhi, M.M.
1982c *Book and materials selection for school libraries and classrooms: procedures, challenges and responses*
Chicago: American Library Association; Alexandria: Association for Supervision and Curriculum Development; Washington: Association of American Publishers
ED 210 772

Keith, S.
1981 *Politics of textbook selection*
Berkeley: Stanford University
ED 207 166

Klein, F.M.
1978 *About learning materials*
Washington: Association for Supervision and Curriculum Development
ED 154 801

Knight, M.M. and Hodges, J.O.

1970 *Curriculum materials analysis system: a summary of experience*
Boulder: Social Science Education Consortium

Knight, M.M. et al.
1971a *Curriculum materials analysis system, long form, revised edition*
Boulder: Social Science Education Consortium
ED 252 474

Knight, M.M. et al.
1971b *Curriculum materials analysis system, short form, revised edition*
Boulder: Social Science Education Consortium
ED 252 475

Komoski, P.K.
1967 *Development of a system for an educational products information exchange. Final report*
Washington: U.S. Department of Health, Education, and Welfare
ED 020 566

Komoski, P.K.
1977 'How can the evaluation of instructional materials help improve classroom instruction received by handicapped learners',
Instructional Technology and the Education of All Handicapped Children, National Center on Educational Media and Materials for the Handicapped

Komoski, P.K.
1980 *What curriculum leaders need to know about selecting instructional materials*
Paper presented at the annual meeting of the Association for Supervision and Curriculum Development, Atlanta, Georgia, 29 March - 2 April 1980
ED 184 146

Komoski, P.K.
1982 *Affecting the system through productive evaluation*
Paper presented at the annual meeting of the American Educational Research Association (66th, New York, N.Y., March 19-23, 1982)
ED 217 071

Komoski, P.K.
1985 'Instructional materials will not improve until we change the system',
Educational Leadership, 42:7, 31-37

Komoski, P.K.
1986 personal communication

Komoski, P.K.
1987 *Educational technology: The closing-in or the opening-out of curriculum and instruction*
Syracuse: ERIC Clearinghouse on Information Resources

Komoski, P.K.
1988 personal communication

Krathwohl, D.R., Bloom, B.S. and Masia, B.B.
1964 *Taxonomy of educational objectives: the classification of educational goals* (Handbook 2: Affective Domain)
New York: David McKay

Kunder, L.H.
1976 *Procedures for textbook and instructional materials selection.* (ERS report)
Arlington: Educational Research Service
ED 132 677

Lawton, D., Gordon, P., Ing, M., Gilby, B., Pring, R. and Moore, T.
1978 *Theory and practice of curriculum studies*
London: Routledge and Kegan Paul

Levine, J.S.
1969 *Empirical study of instructional materials evaluation in special education* (Monograph Series Number 3)
East Lansing: Michigan State University
ED 031 849

McArthur, C.
1988 personal communication

McGarey, D.G. et al.
1964 *The treatment of minorities, guidelines for textbook selection*
Harrisburg: Pennsylvania State Department of Public Instruction
ED 001 923

McGrew, M.L.
1983 *Survey of the status of materials selection policies in Iowa public school districts in 1983 and comparisons with status in 1979*
Des Moines: Iowa State Department of Public Instruction; Cedar Falls: University of Northern Iowa
ED 242 327

McGuigan, F.J.
1971 *How to select and evaluate programmed instructional materials*
Raleigh: North Carolina State University
ED 051 455

McKeon, H.M.
1975 *Book selection criteria of children's book editors and elementary classroom teachers*
Rutgers: The State University of New Jersey

ED 116 136

McNeil, J.T., Rosante-Loro, R., Weddell-Monnig, J., Watterson, K. and Szegda, M.
1980 *Description and analysis of program data: Head Start sample programs* (National Evaluation of Head Start Educational Services and Basic Educational Skills Demonstration Programs, Project Report 7),
Durham: NTS Research Corporation

Madey, D.L., Royster, E.C., Decad, J.K. and Baker, R.F.
1980 *Building capacity for the improvement of educational practice: Volume 1: an evaluation of NIE's State Dissemination Grants Program* (Final Evaluation Report), Durham: NTS Research Corporation

Madey, D.L. and Stenner, A.J.
1981 'Policy implications analysis: a method for improving policy research and evaluation'.
In: Aslanian, C.B. (ed.), *Improving educational evaluation methods: impact on policy* (Sage Research Series in Evaluation, vol. 11)
Beverly Hills: Sage Publications, 23-39

Magisos, J.H.
1973 *A model for acquisition and selection of career instructional materials. Final report*
Newton: New England Resource Center; Columbus: The Ohio State University
ED 098 385

Manitoba Education
1988 *Procedures for the selection of learning resources*
Winnipeg: Manitoba Education

Marsh, C.J.
1983a 'Curriculum materials analysis in social studies methods classes'
The Social Studies, 74:3, 107-111

Marsh, C.J.
1983b 'Primary school principals: intentions and realities in the selection of curriculum materials'
The Australian Administrator, 4:3, 1-4

Marsh, C.J., Willis, S., Newby, J.H., Deschamp, P. and Davis, B.P.
1981 *Selection and distribution of curriculum materials* (Cooperative Research Series, Report No. 5)
Perth: Education Department of Western Australia

Marsh, C.J., Willis, J., Newby, J.H., Deschamp, P. and Davis, B.P.
1985 'Teachers' perceptions about the selection, distribution and use of social studies and mathematics curriculum materials within a state education system'
Journal of Curriculum Studies, 17:1, 49-61

Maryland State Department of Education

1981 *Guidelines for the evaluation and selection of instructional materials*
Baltimore: Maryland State Department of Education
ED 206 771

Massachusetts State Department of Education
1975 *A guide for the evaluation of instructional materials under chapter 622*
Boston: Massachusetts State Department of Education
ED 159 215

Mehlinger, H.D. and Patrick, J.J.
1970 *The use of 'formative' and 'summative' evaluation in an experimental curriculum project: a case in the practice of instructional materials evaluation*
Bloomington: Indiana University
ED 041 443

Ministry of Education, Province of British Columbia
1981a *Analysis of learning resources: readability*
Victoria: Ministry of Education, Province of British Columbia

Ministry of Education, Province of British Columbia
1981b *Analysis of learning resources: social considerations*
Victoria: Ministry of Education, Province of British Columbia

Ministry of Education, Province of British Columbia
1982 *Interpreting detailed analyses*
Victoria: Ministry of Education, Province of British Columbia

Ministry of Education, Province of British Columbia
1983 *Publisher's information booklet*
Victoria: Ministry of Education, Province of British Columbia

Ministry of Education, Province of British Columbia
1987 *Policies and procedures committees and learning resources,*
Victoria: Ministry of Education, Province of British Columbia

Ministry of Education, Victoria
1984 *Educational film and video appraisal criteria: a guide*
Melbourne: Ministry of Education Victoria

Morrissett, I. and Stevens, W.W.
1967 *Steps in curriculum analysis outline*
Boulder : Social Science Education Consortium

Morrissett, I., Stevens, W.W. and Woodley, C.P.
1968 'A model for analyzing curriculum materials and classroom transactions'. In: Fraser, D. McC. (ed.), *Social Studies Curriculum Development: Prospects and Problems* (39th Yearbook)
Washington: Council for the Social Studies, 229-276

Moses, K.J. and Watt, L.B. (comps.)
1976 *Aids to media selection for students and teachers* (revised)
Washington: Office of Education
ED 127 631

Muther, C.
1986 'Textbook deals: is your board putting cost before curriculum?'
American School Board Journal, 173:1, 32-34

Nadler, H.
1969 *Criteria for the selection of ESOL materials*
Paper presented at the Third Annual TESOL Conference, Chicago, Illinois, 5-8 March 1969
ED 030 880

Naegle, V.J.
1970 *The evaluation of instructional materials. Bibliography*
Washington: Mid-Atlantic Region Special Education Instructional Materials Center
ED 044 447

National Commission on Excellence in Education
1983 *A nation at risk: the imperative for educational reform*
Washington: U.S. Government Printing Office

National Council of Teachers of English
1970 *Criteria for teaching materials in reading and literature*
Urbana: National Council of Teachers of English
ED 061 222

National Education Association
1973 *Checklist for selecting and evaluating U.S. history textbooks*
Washington: National Education Association
ED 097 241

National Education Association
1978 *Analyzing children's books from a Chicano perspective. Description of teacher inservice education materials. Summary information*
Washington: National Education Association
ED 169 010

New South Wales Department of Education
1981 *School supply review of committees and procedures*
Sydney: New South Wales Department of Education

New Mexico State Department of Education
1973 *Guidelines for the evaluation and selection of textbooks in the treatment of minorities (especially in social studies)*
Santa Fe: New Mexico State Department of Education
ED 084 171

New York State Department of Education
1980 *Degrees of Reading Power: test administration manual*
(Forms PX-1, PA-2, PA-4, PA-6, PA-8)
New York: The College Entrance Examination Board

Newman, J.A.
1977 *Guidelines for identifying and counteracting bias in instructional materials grades K-12*
Washington: Olympia School District
ED 155 233

Niedermeyer, F. and Yelon, S.
1981 'Los Angeles aligns instruction with essential skills'
Educational Leadership, 38:8, 618-620

Ohio State Department of Education
1983 *Materials selection guidelines* (Minimum Standards Implementation Series)
Columbus: Ohio State Department of Education
ED 252 937

Olsen, H.C.
1968 *Linguistic principles and the selection of materials*
Paper presented at the International Reading Association Conference, Boston, Massachusetts, 24-27 April 1968
ED 022 649

Orlich, D.C. (ed.)
1979 *They still use textbooks ... don't they? Selection and criteria for evaluation*
Olympia: School Information and Research Service
ED 158 702

Parasuik, G.
1988 personal communication

Pennsylvania State Department of Public Instruction
1967 *The treatment of minorities: guidelines for textbook selection*
Harrisburg: Pennsylvania State Department of Public Instruction
ED 024 727

Perkins, F.L.
1972a *Book and non-book media: annotated guide to selection aids for educational materials*
Champaign: National Council of Teachers of English
ED 064 264

Perkins, F.L.
1972b *Book and non-book media: annotated guide to selection aids for educational materials*
Urbana: National Council of Teachers of English
ED 081 008

Perkins, R.
1967 *Book selection media, a descriptive guide to 170 aids for selecting library materials*
Champaign: National Council of Teachers of English
ED 017 506

Peters, R.S.
1966 *Ethics and education*
London: George Allen and Unwin

Piper, K.
1976 *Evaluation in the social sciences for secondary schools* (Teachers' Handbook)
Canberra: Australian Government Publishing Service

Rabin, A.T.
1978 *A comparison of two methods of in-service programming for helping content area teachers select and use student reading materials*
Report based on Ed.D. dissertation, University of Pennsylvania
ED 172 163

Reynolds, A.B.
1981 *A proposed design for a vocational instructional materials evaluation*
Clemson: South Carolina Vocational Education Research Coordinating Unit
ED 222 732

Schmidt, M.
1981 *Textbook selection criteria, handbook II*
Washington: Office of the State Superintendent of Public Instruction; Olympia: Division of Instructional and Professional Services
ED 252 956

Schmidt, N.J.
1975 *Evaluating materials about Africa for children*
Paper presented at the annual meeting of the Illinois Association of School Librarians, Springfield, Illinois, April 1975
ED 107 262

School Library Journal
1981 'EPIE's programs and services: SLJ interviews Ken Komoski',
School Library Journal, 27:6, 26-31

Scott, R.
1987 personal communication

Scriven, M.
1981 'Product evaluation'. In: Smith, N.L. (ed.) *New techniques for evaluation* (Volume 2: New Perspectives in Evaluation)
Beverly Hills: Sage Publications, 121-166

Scriven, M. et al.
1971 *An evaluation system for regional labs and R&D centers*
Washington : U.S. Office of Education
ED 061 299

Sigurgeirsson, I.
1986a Improving curriculum materials development in Iceland through curriculum analysis. M.A. in Education thesis, University of Sussex

Sigurgeirsson, I.
1986b An inquiry into the nature, role and use of curriculum materials in Icelandic schools (grade four through six). A research proposal for Ph.D. University of Sussex

Sigurgeirsson, I.
1987 personal communication

Simpson, E.L. and Loveall, P.W.
1976 *Preparing and selecting printed educational materials for adult new readers* (Information Series Number 9)
DeKalb: Northern Illinois University; Columbus: ERIC Clearinghouse on Adult, Career and Vocational Education
ED 132 244

Singh, S.P. and Barnard, J.
1969 *Evaluation of instructional materials ... an approach; position paper*
Tampa: University of South Florida
ED 038 812

Singleton, L.R.
1987 personal communication

Singleton, L.R.
1988 personal communication

Social Science Education Consortium
1971 *Curriculum materials analysis system*
Boulder: Social Science Education Consortium

Stenhouse, L.
1975 *An introduction to curriculum research and development*
London: Heinemann

Stevens, W.W. and Fetsko, W.
1968 'A curriculum analysis system'
Social Science Education Consortium, 4

Stevens, W.W. and Morrissett, I.

1967-1968 'A system for analyzing social science curricula'
EPIE Forum, 1, 4-5, 12-15

Stufflebeam, D.L., Brickell, H.M., Guba, E.G. and Michael, W.B.
1971a *Design for evaluating R & D institutions and programs*
Washington: U.S. Office of Education
ED 061 298

Stufflebeam, D.L., Foley, W.J., Gephart, W.J., Guba, E.G., Hammond, R.L. Merriman, H.O. and Provus, M.M.
1971b *Educational evaluation and decision making*
Itasca: F.E. Peacock Publishers

Swisher, G. (ed.)
1968 *Evaluation: processes and practices, selected papers from the Conference for the Evaluation of Instructional Materials* (Washington, D.C., April 5-6 1968)
Washington: Mid-Atlantic Region Special Education Instructional Materials Center
ED 036 913

Sword, J.
1982 *The what and how of book selection: research findings*
Paper presented at the annual meeting of the National Council of Teachers of English spring conference, Minneapolis, Minnesota, 15-17 April 1982
ED 235 506

Syme, R.
1987 personal communication

Taba, H.
1962 *Curriculum development: theory and practice*
New York: Harcourt Brace and World

Talmage, H. and Walberg, H.T.
1977 *An evaluation research model for system-wide textbook selection*
Paper presented at the annual meeting of the American Educational Research Association, New York, New York, 4-8 April 1977
ED 138 637

The Ohio State University
1976 *Standard criteria for the selection and evaluation of instructional material. Teacher level*
Columbus: The Ohio State University
ED 132 760

The Ohio State University
1977 *Professional teacher education module series: select student instructional materials* (Module B-5 of Category B ... Instructional Planning)
Columbus: The Ohio State University

ED 149 063

Tierney, R.J. et al.
1980 *Some classroom applications of text analysis toward improving text selection and use* (Reading Education Report Number 17)
Cambridge: Bolt, Beranek and Newman; Urbana: Illinois University
ED 192 251

Tom, A.
1977 *An approach to selecting among social studies curricula. Revised edition*
St. Louis: Central Midwestern Regional Educational Laboratory
ED 152 605

Tyler, R.W.
1949 *Basic principles of curriculum and instruction*
Chicago: University of Chicago Press

Ventura, M.F.
1983 *The development of a weighted checklist prototype for instructional materials selection for special education students. Final report*
Lawrence: University of Kansas
ED 244 501

Walton, W.W.
1973 *Dissemination recommendations on and descriptions of exemplary products. Panel review of products (PROP), 1972-1973*
Princeton: Educational Testing Service
ED 083 292

Walton, W.W. et al.
1973 *Selection of exemplary educational products. Panel review of products, 1972-1973*
Princeton: Educational Testing Service
ED 083 291

Ward, T.
1969 *Evaluation of instructional materials. Position paper*
East Lansing: Michigan State University
ED 078 610

Washburn, J.M.
1978 *The evaluation process*
Paper presented at the annual meeting of the National Council of Teachers of English, Kansas City, Missouri, 23-25 November 1978
ED 169 543

Watt, M.G.
1987 Selecting and evaluating curriculum materials. A study of teacher education for bilingual-bicultural and multicultural educators, M.Ed. St. thesis

Hobart: University of Tasmania
ED 279 620

Welch, W.W.
1978 *Goal-free formative evaluation: an example*
Paper presented at the annual meeting of the American Educational Research Association, Toronto, Ontario, 27-31 March 1978
ED 173 350

Western Australian Educational Computing Consortium
1986 *National software clearinghouse feasibility study : report to Commonwealth Curriculum Development Centre*
Perth: Western Australian Educational Computing Consortium

Whipple, G.
1968 *Practical problems of schoolbook selection for disadvantaged youth*
Paper presented at the International Reading Association conference, Boston, Massachusetts, 24-27 April 1968
ED 029 750

Wilcox, L.M.
1971 *Choosing literature for young children*
Los Angeles: University of Southern California
ED 071 022

Williams, B. et al.
1976 *Manual for evaluating content of classroom instructional materials for bilingual-multicultural education*
San Diego: San Diego State University
ED 160 276

Williams, C.T.
1975 *Criteria for analyzing ethnic bias in instructional materials*
East Lansing: Michigan Education Association
ED 118 662

Witter, J. (ed.)
1977 *Bias in the textbooks: a symposium*
Salem: Oregon Association for Supervision and Curriculum Development
ED 147 852

Women on Words and Images
1972 *Dick and Jane as victims: sex stereotyping in children's readers*
Princeton: Women on Words and Images

Women on Words and Images
1979 *A checklist for evaluating materials*
Princeton: Women on Words and Images

Women on Words and Images
n.d.a *Doctor, lawyer, Indian chief...? sex stereotyping in career education materials*
Princeton: Women on Words and Images

Women on Words and Images
n.d.b *Sexism in foreign language textbooks*
Princeton: Women on Words and Images

Wood, D.
1981 'Social studies textbooks in a multicultural society'
History and Social Science Teacher, 17:1, 21-29

Worthen, B.R. and Sanders, J.R.
1978 *Educational evaluation: theory and practice*
Worthington. Charles A. Jones Publishing

Wright, I.
1983 'The politics of curriculum materials selection: the British Columbia case'
History and Social Science Teacher, 18:4, 211-218

Wu Yongxing
1988 personal communication

Zenke, L.L.
1981 *School book selection: procedures, challenges and responses*
Paper presented to the annual meeting of the National Council of Teachers of English, Boston, Massachusetts, 20-25 November 1981
ED 213 022

GLOSSARY

Section 1: Learner-based Verification and Revision

1.1 Pilot-trial

This term is used to designate an initial, small-scale use of the product under conditions not so rigorous as those indicated by the term 'pilot-test'. A pilot-trial is conducted before final development of the product has been completed.

1.2 Pilot-test

Similar to a pilot-trial but more rigorous, including the use of at least one class group of students, the regular teacher using the product, and the administration of formal data-collection instruments to assess student learning.

1.3 Field-trial

Less rigorous than a field-test, a field-trial employs wide-scale use of informal methods of observation relying on teacher and student opinions about the utility and effectiveness of the product, but stopping short of the requirements of good experimental design in selecting the sample.

1.4 Field-test

Similar to a field-trial, but more rigorous, a field-test employs specification of the nature of the product to users, specification of the purposes of the field-test to users, the wide-scale use of sampling procedures to select student groups, the administration of data-collection instruments to assess student learning, the training of those field-testing the product, and report writing of results for dissemination of information on the field-test to user groups.

Section 2: Screening for Adoption

2.1 Informal Procedure

This term encompasses a range of activities to screen instructional materials such as reading or informal consultations.

2.2 Appraisal Form

This is an instrument embodying a set of agreed-upon criteria. It is administered by committee members as an initial step to screen materials.

Section 3: Descriptive Analysis and Evaluation

3.1 Annotation

This term applies to a simple listing of characteristics of a material based upon descriptive criteria.

3.2 Descriptive Analytical Review

This term applies to extended descriptive analysis of characteristics of a material.

3.3 Descriptive Analytical and Evaluative Review

This term applies to extended descriptive analysis of characteristics of a material based upon descriptive and evaluative criteria.

3.4 Instructional Design Analysis

This term applies to extended descriptive analysis of characteristics of a material based upon a model of curriculum development.

3.5 Instructional Design Analysis to Establish Internal Congruence

This term applies to extended descriptive analysis of characteristics of a material based upon matching the elements within a model of curriculum development.

3.6 Instructional Design Analysis to Establish External Congruence

This term applies to extended descriptive analysis of characteristics of a material based upon a model of curriculum development that fits the material to an instructional program.

Section 4: Decision-making for Selection

4.1 Informal Procedure

This term encompasses a range of activities to select instructional materials, such as scanning displays of materials, referring to publishers' catalogues, or consulting colleagues.

4.2 Rating Scale

This term applies to the use of a scale to rate recommendations of instructional materials for selection.

4.3 Written Brief

This term refers to a brief review aimed at judging the advantages and disadvantages of an instructional material. It is prepared by a consultant or prospective user to aid selection.

Section 5: Decision-making for Implementation

5.1 Informal Procedure

This term encompasses a range of activities to implement instructional materials, such as seminars for professional development.

5.2 Written Brief

This term refers to a brief review of an instructional material. It is prepared by a consultant or prospective user to aid implementation.

5.3 Demonstration

This term applies to the demonstration of an instructional material in the classroom to aid implementation.